

# FANTAVISION™

USER'S MANUAL



  
Broderbund®





# FANTAVISION™

THE MAGIC MOTION/SPECIAL EFFECTS GENERATOR

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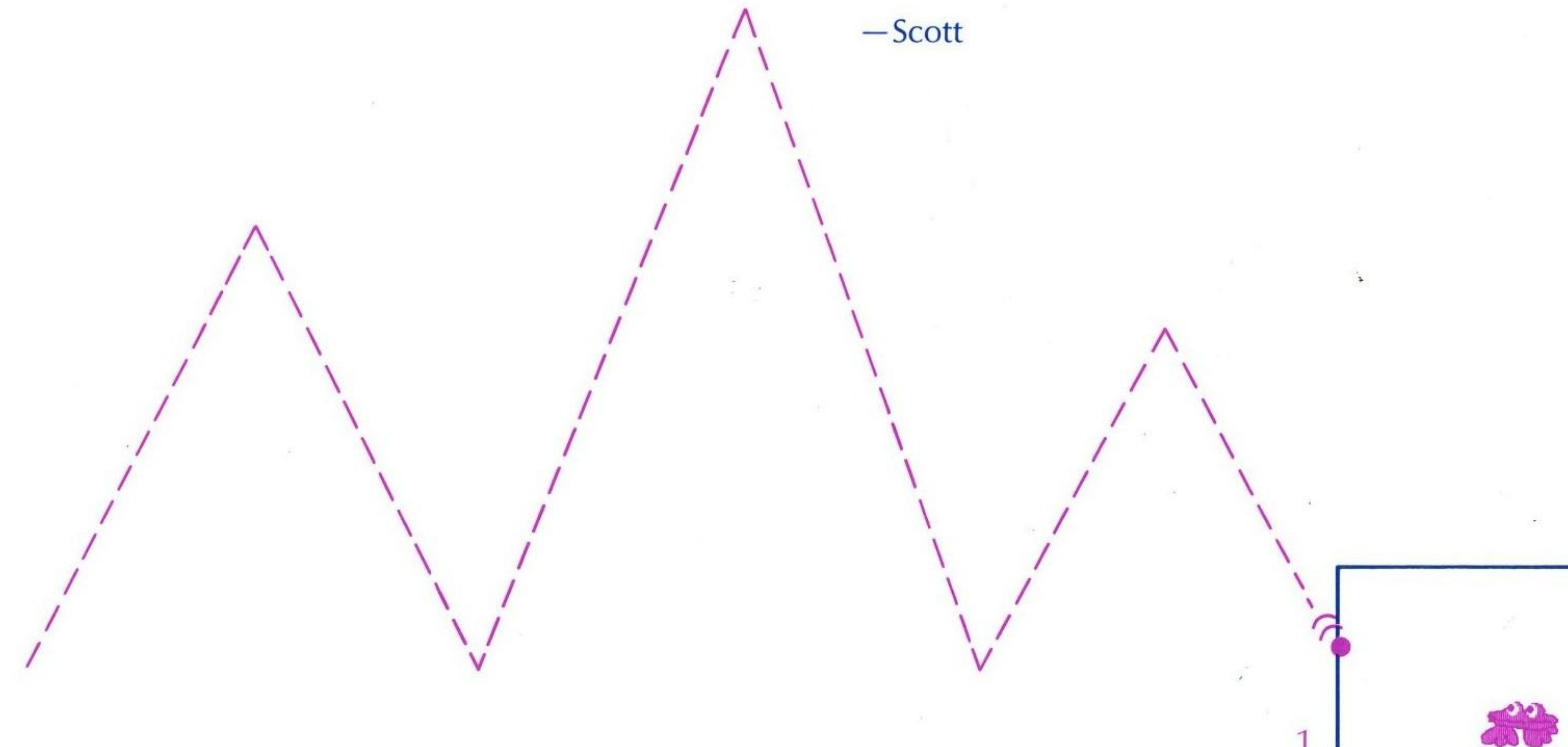
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To Mom and Dad, with Love.

—Scott





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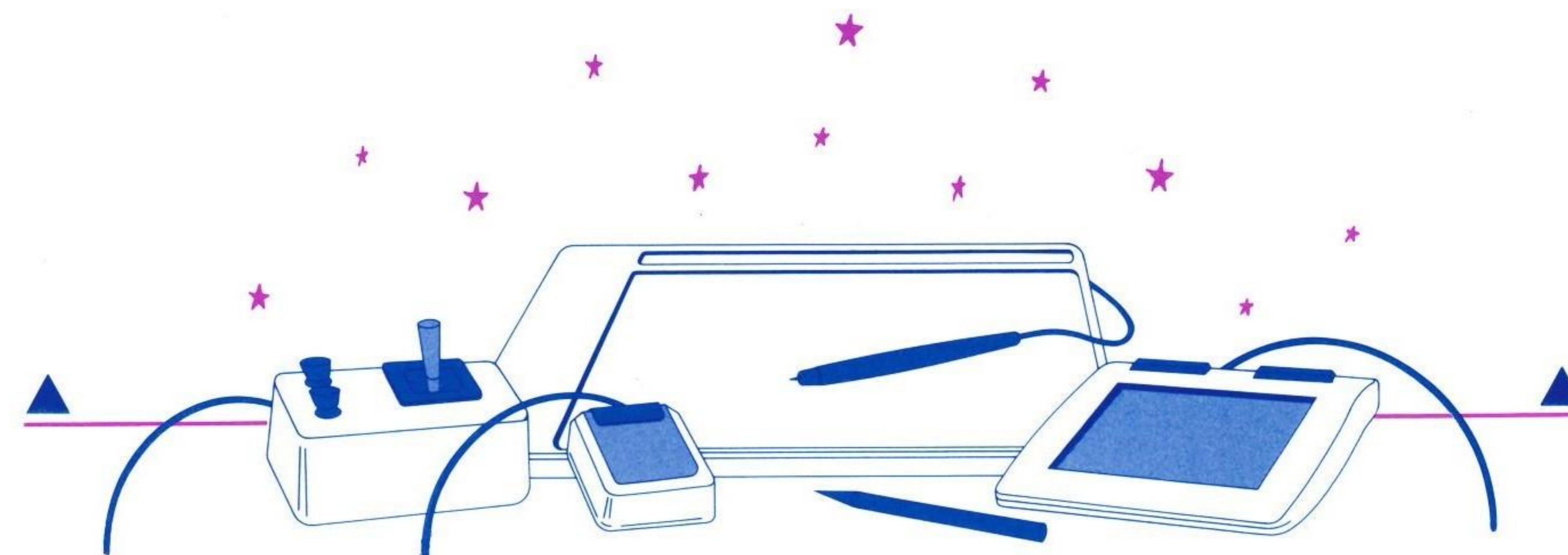
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## ABRACADABRA...

...you are about to make some magic. And if seeing is believing, then the best way to introduce you to the magic of FANTAVISION is for you to get a look at how it works. So before you start to explore this manual, boot up the back side of your FANTAVISION disk and be amazed!





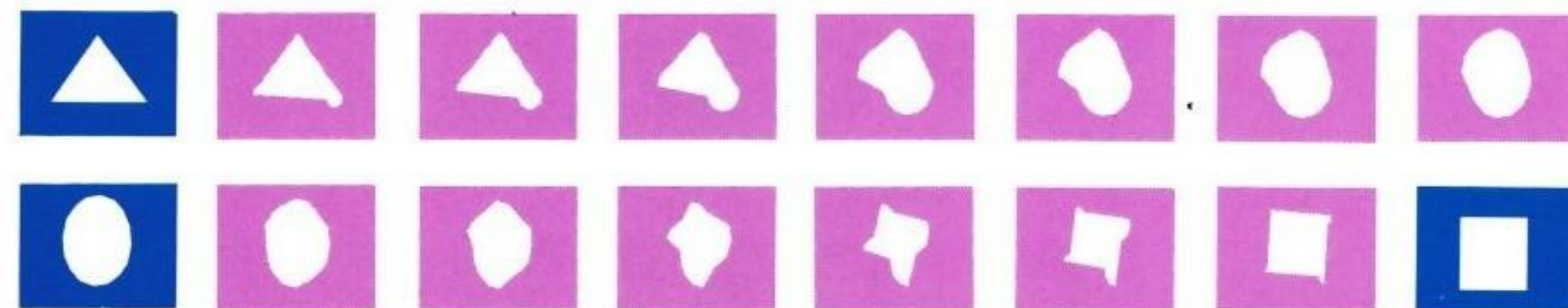
# HERE'S HOW FANTAVISION WORKS

## TWEENING AND TRANSFORMATION

To draw using FANTAVISION you plot a series of points which the computer connects together to form objects—something like the way that “connect the dots” cartoons work. Then you and FANTAVISION become partners in manipulating those objects to create animation and special effects. It's a partnership where FANTAVISION does all the work, and you have all the fun!



“Tweening”—short for “in between” frames—is the animation technique that makes the objects that you create “flow.” Frames are the building blocks of FANTAVISION. Each frame contains a single still picture that you create on the screen. (Frames are indicated on the FANTAVISION screen by the film strip on the right.) If, for example, you draw a stick figure standing straight up in Frame 1, and then draw the same figure touching its toes on Frame 2, FANTAVISION will run the sequence of Frame 1 and Frame 2—with as many as 64 intermediate positions—so that your little stick figure will appear to bend over slowly to touch its toes.



“Transformation” is another technique central to FANTAVISION's magic. If you were to add, say, a frog as Frame 3, the little stick figure, after touching its toes, would turn smoothly into a frog.

With FANTAVISION you can produce original animated sequences from scratch, or, using the program's easy-to-use editing features, make changes to the demo sequences located on the back of the disk. You can create background scenes for your sequences with FANTAVISION or load single high resolution backgrounds from another program. You'll also be able to produce self-running “movies” of your creations that you can show off to friends, send as animated greeting cards, or use for demonstration purposes in the classroom or in meetings.

FANTAVISION can be whatever you want it to be—a tool or a toy. Just let your imagination run free, and then see what happens!



# OFF AND RUNNING

## HOW THIS MANUAL IS ORGANIZED

### GETTING STARTED

This tells you what hardware you'll need, how to load the program, and how to make a backup copy and a data disk.

### BARE BONES

If you're one of those people who prefers booting up the program and plunging right in, or if you can't wait another second to begin creating your own sequences, turn directly to the BARE BONES section of the manual starting on page 11. BARE BONES consists of brief, introductory descriptions of all of the various functions of the program.

### STEP-BY-STEP

If you need a little hand holding and prefer the “tutorial” approach to learning, turn to STEP-BY-STEP on page 28. It will walk you through each function and give you some hands-on practice with each of them as you go along.

### APPENDIX I

This tells you how to call up Movie Matinee, a Show made up of Movie Demos on Side II of the FANTAVISION disk, and tells you how to create a Show Disk of your own.

### APPENDIX II

This goes into detail about the more complex features of some of FANTAVISION's functions.

### APPENDIX III

This Trouble-Shooting section points out problems you may encounter when using some of the FANTAVISION features, and suggests what to do to fix them.

### GLOSSARY

This provides definitions of the more or less “technical” terms used throughout the manual.

### AT-A-GLANCE

A diagram that identifies the features shown on the FANTAVISION screen, and a list of the keyboard commands are located on the inside back cover.

**SPECIAL NOTE:** You may print out individual screens that you create by saving the screen as a Backdrop and then using a screen dump program. FANTAVISION is not itself, however, a printing program.





# GETTING STARTED

## WHAT YOU WILL NEED

- ▶ Apple II with minimum 64K
- ▶ disk drive
- ▶ color or monochrome TV or monitor
- ▶ mouse, Apple Graphics Tablet, KoalaPad, or joystick

## MAGIC MOUSE AND OTHER TOOLS

The best tools for using FANTAVISION are a mouse, an Apple Graphics Tablet, or a KoalaPad. Although you can use a joystick, you'll have less control over the cursor.

Using your tool, you can move the cursor (a black arrow or other shape) around the screen to select features and create and animate shapes.

### MOUSE

FANTAVISION's features appear as "icons" (graphic symbols like the pencil, hands, and knife on the left side of the menu or the film strip on the right); as numbers; and as features with names, hidden under "pull-down menus." You can "pull down" each feature from the main menu, much as you would a shade.

You select an icon or number by using the mouse to move the cursor to the icon or number. Next, press the button on the mouse to highlight your choice, and then release it. This is called "clicking the cursor." To select a feature from a pull-down menu, use the mouse to move the cursor to the menu and hold down the button. Then move the cursor to the feature you want and release the button.

### APPLE GRAPHICS TABLET

Move the stylus on the surface of the pad to move the cursor. Press the pen down in place of pressing the mouse button. To run a Movie, select GO and then hold the cursor close to the surface of the pad without pressing on it.

### KOALAPAD

Apply pressure to the tablet's surface to move the cursor. Use the left pad button in place of the mouse button.

### JOYSTICK

Move the joystick up, down, left, and right to move the cursor. Use button 0 in place of the mouse button.

**NOTE:** The buttons on joysticks may vary. Experiment to see which to use with yours.



## LOADING THE PROGRAM

Place the FANTAVISION disk in the disk drive with the label up. Turn on your monitor and your computer. The program will load automatically, and a welcoming title screen will greet you.

The program will automatically read what kind of input device you are using. If you do not have an input device connected to your computer when you start the program, or if you switch to another input device at a later time, press the **Space Bar** when you are prompted to do so by the program following the appearance of the Title Screen, and follow the easy prompts.

This menu also offers you the option to Create a Show Disk (See page 57).

## MAKING A BACKUP COPY

Before you begin, it's a good idea to make a backup copy of FANTAVISION. One time only, the program lets you make one backup copy of the front or program side of the disk. The Demo side of the disk is not copy protected. You may make as many copies of the demos as you wish, simply by saving them to your own data disk. See Save Movie/Backdrop, page 26. To make a backup copy of FANTAVISION, you will need a blank disk. Make certain that the notch on the disk you use is not covered by a write-protect tab.

1. When you boot up FANTAVISION, a prompt on the screen will tell you to "PRESS ESC TO MAKE BACKUP DISK." After you press **Esc**, just follow the prompts that appear on your screen. A disk label is provided to identify the copy you make. You must use this label to get replacement privileges on your backup.

2. When you have completed making your backup disk, the program will return you to the main FANTAVISION screen.

**NOTE:** ALWAYS KEEP YOUR ORIGINAL FANTAVISION DISK (NOT JUST THE BACKUP) HANDY WHEN CALLING CUSTOMER SERVICE.

## MAKING A DATA DISK

In order to save the movies and special effects you create, you will need a formatted data disk. To format a disk:

1. Pull down the FILE MENU, select Format Disk, and then follow the simple prompts.

2. When you have completed the process, the program will return you to the main FANTAVISION screen.

**NOTE:** ALWAYS KEEP A FORMATTED DATA DISK ON HAND. YOU CANNOT FORMAT A DISK AFTER YOU HAVE CREATED A MOVIE WITHOUT LOSING THE MOVIE.





## LOADING THE MOVIE AND BACKGROUND DEMOS

A collection of Movie Demos and sample Backgrounds is located on the back side of the FANTAVISION disk. To gain access to these demos and backgrounds:

1. Remove the FANTAVISION disk from the drive, turn it over, and re-insert it with the back side up. Pull down the FILE MENU and select LOAD MOVIE. The Load Screen will appear.
2. Click the button when the cursor is over the title of the Movie you would like to run. The Movie will come up on the screen.
3. You may select a Backdrop from the Load Movie screen by clicking over the word Backdrop, or from the FILE MENU by selecting LOAD BACKDROP.
4. FANTAVISION loads from Drive 1. If you are using a second disk drive, select the number 2 in LOAD MOVIE or LOAD BACKDROP to get a list of the Demos on the data disk in Drive 2.

For a two drive system to work properly, both drives must be connected to a single controller card. In addition, when booting on a duo drive system, you must insert a diskette into drive #2.



Each function discussed below is numbered to correspond with the Diagram of the FANTAVISION Screen on the inside back cover.

## #1 DRAW



To DRAW using FANTAVISION you plot a series of points which the computer connects together to form objects. Points are plotted by pressing the mouse, joystick or KoalaPad button ("cursor button") when the cursor is in the desired position.

You tell the computer that you are finished drawing an object either by connecting the last point plotted to the first, or by changing the Object Number or the Frame Number (see below). If you inadvertently close off an object by connecting the first and last points, or by changing the object or frame number, pressing the cursor button twice will open it up again. You can then continue working from the last point you plotted.

There is a limit of 32 points per object. The OBJECT STATUS BOX (See page 16) will tell you how many points you have plotted. When you try to plot point 33, you will be told that the object is full. FANTAVISION allows you to animate 8 objects in each frame.

## #2 OBJECT COUNTER



The OBJECT COUNTER will tell you the number of the object you are currently working on by highlighting that number in black. When you are finished working on an object, you can use the OBJECT COUNTER to move on to the next simply by clicking the cursor on the new Object Number.

You do not need to work on objects in numerical order. However, the higher the Object Number, the greater the priority of the object. In other words, if you draw Object #1 and Object #2 in exactly the same place, only Object #2 will be visible.

By using the CAPTURE BOX (page 15), it is possible to work on more than one object at once. In this case all the objects being manipulated will be highlighted in black in the OBJECT COUNTER. You can use the OBJECT COUNTER to insert or delete objects from the CAPTURE BOX simply by pressing the appropriate Object Number.

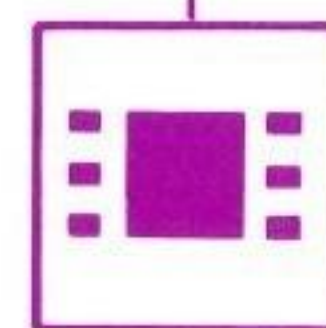
You can introduce a new object or delete an existing object at practically any point. To delete an object, simply do not use that Object Number for at least one frame. To introduce an object, just make sure that the Object Number you want to use was not used in the previous frame.

The "French Window" to the right of the number 8 in the OBJECT COUNTER is used for two purposes. Normally, you will select this window when you are working on background color. In this case the OBJECT STATUS BOX (See page 16) will show the Background color and the total number of points in the frame. The "French Window" also gives you access to two special FANTAVISION functions. See "Looping" in APPENDIX I (page 58), and "Clipping Window" in APPENDIX II, (page 60).





## #3 THE FILM STRIP



At the right of your screen is THE FILM STRIP. There are sixteen squares with sprocket holes visible in THE FILM STRIP. Each one of these squares represents eight frames in your movie. To tell what frame you are working on at the moment look at the FRAME COUNTER at the top right corner of your screen.

To move to a different frame, press the UP arrow, which takes you back "up" to the beginning of the Movie, or the DOWN arrow, which takes you "down" to the end of the Movie. You may move to any frame at any time. However, whenever you "look" at a frame you "expose" it. That doesn't mean that you can't use it. What it does mean is that a blank frame will be added to your Movie. Blank frames can be deleted using CUT in the EDIT MENU commands (see page 23).

If you're working on a long movie and want to move around quickly, rather than one frame at a time, touching one of the symbolic frames in the strip will put you at the beginning of that block of eight actual frames. You may also move quickly through THE FILM STRIP by holding the cursor button down on one of the arrows.

THE FILM STRIP shows you which blocks of film are exposed by turning them a different color. The block in which you are working at the moment will be black.

You may "drag" this black block to any exposed frame in the Movie. In addition, you can get to the last frame in the Movie by clicking the cursor in the unexposed area of THE FILM STRIP.

## #4 GRAB POINT



This command allows you to GRAB and move any point in any object in the current frame. Lines which act like rubber bands will show you the points which connect to the one you're moving.

The OBJECT COUNTER will highlight in black the Object Number you've grabbed.

Where many points are close together it may be difficult to GRAB the one you want. You may have to move the other points out of the way and then put them back after you've grabbed and moved the point you want.



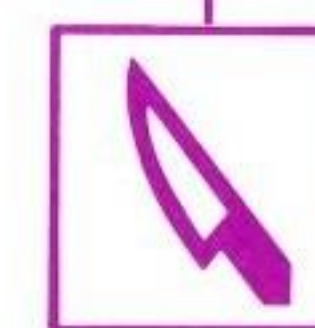
## #5 INSERT POINT



To insert points into a completed object select the INSERT POINT function. By placing the cursor between two adjacent points (positioning it as close to the middle as possible), and then pressing the cursor button, you can "rubber band" around with your new point until you reach the desired location. Release the button and the new point is set.

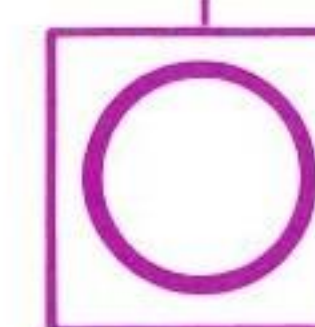
You cannot insert a point into the middle of a solid object without starting at the edge.

## #6 DELETE POINT



You can delete points from an object with the DELETE POINT knife. Place the cursor button over the point to be deleted and press. If you wish to delete an entire object point by point you must delete every point in it. The object will become a line, then a point, and then disappear. There are easier ways to delete objects. See CAPTURE BOX (page 15) and ZAP (page 24).

## #7 MAKE CIRCLE



The MAKE CIRCLE command places the center of a circle at the spot where the cursor is located when you press the button. The perimeter of the circle will be placed at the point where you release the button. The circle is made up of 16 points. Point 1 is located at the place where you released the cursor button.

If you don't like the way your circle looks as you are trying to set it up, move the cursor off to the side of the screen and release the button. Now you can start a new circle.

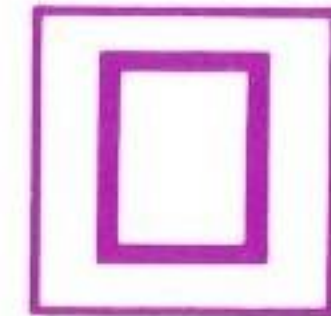
Very small circles will not look perfectly round when you blow them up with the ZOOM command. Circles are not "clipped" by the edges of the screen. Rather, they are flattened against the edge and will not look circular if moved to the center at a later time.

You can't use MAKE CIRCLE when there are any points already plotted in that Object Number.

To make ellipses with MAKE CIRCLE you can squash or stretch your circle using the SQUASH command in the GOODIES MENU (page 22).



## #8 MAKE RECTANGLE

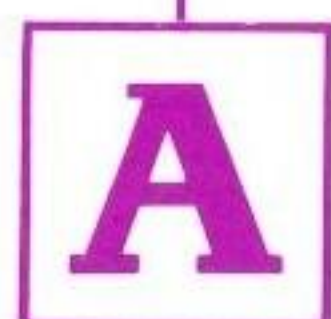


Select the MAKE RECTANGLE function to quickly make rectangles and squares using a rubber banding box, rather than drawing them point by point.

You can't use MAKE RECTANGLE when there are any points already plotted in that Object Number.

## #9 TEXT

### USING THE TEXT FUNCTION



FANTAVISION allows you to place text on the screen in two ways. The easiest and most flexible way is to use the TEXT mode, which you select with the "A" icon. This method allows you to type in (slowly please, FANTAVISION is NOT a word processor) the letters you want to appear on the screen.

The second method, which is more difficult to use, allows you to load in very complicated characters. This method is covered in APPENDIX II, "Using Fonts from the Demo Disk" (page 59).

Once you have selected TEXT mode place the cursor where you want to start typing and press the button. Wait until you see a square cursor, then start typing. If you accidentally start typing before pressing the button, you will wind up entering keyboard commands, not typing.

The TEXT mode characters are always from the same font, but you can manipulate them using the GOODIES MENU to simulate a variety of typestyles.

Once you start typing you can put four letters into each available Object Number. As one Object Number is filled, the text will automatically start to fill the next available Object Number so that you do not have to stop typing.

To delete, use the left arrow key. To end a line, use the **Return** key. To end an Object Number, use the right arrow key. This feature is useful for manipulating letters or words separately. For example, if your name is Bob, you may wish to press the right arrow after typing "Bob," even though you could enter one more letter into that Object Number. Keeping the word "Bob" as a separate Object Number enables you to ZOOM, TURN, LEAN, etc. "Bob" without including the letter which follows.

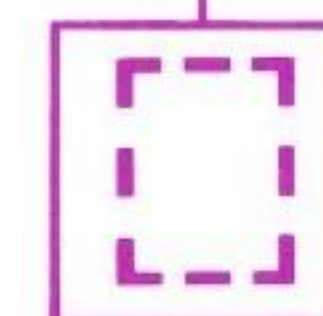


You may go back and re-open an Object Number with TEXT in it if it is not yet made up of four letters. At this point the software will once again automatically move to the next available Object Number so that you can keep typing without stopping to choose new Object Numbers. An Object Number needn't be empty of TEXT before more TEXT is added. This means that manipulating a single Object Number may affect letters sitting in words quite far apart from each other. Likewise, the left arrow key will DELETE down through the Object Numbers in sequence, NOT back through the letters in sequence.

Check the STEP-BY-STEP procedure (page 32) if you find this confusing.

The letters created by TEXT mode are actually lines made up of seven segments. Therefore, they are difficult to manipulate point by point. Study Line mode in the DIMENSION BOX to gain a clearer understanding of the problem.

## #10 CAPTURE BOX



The CAPTURE BOX function allows you to select which objects in a frame you wish to manipulate using the commands in the GOODIES MENU, and COPY, PASTE and ZAP in the EDIT MENU. When the CAPTURE BOX is not selected the GOODIES affect all objects in the frame.

There are two ways to capture objects with the CAPTURE BOX. The first way is to surround the objects with the CAPTURE BOX. Do this by holding the cursor button down and maneuvering the CAPTURE BOX around the objects until they are enclosed. Then release the button. The CAPTURE BOX will shrink to tightly surround the objects within it. The OBJECT COUNTER will highlight in black those objects included in the CAPTURE BOX.

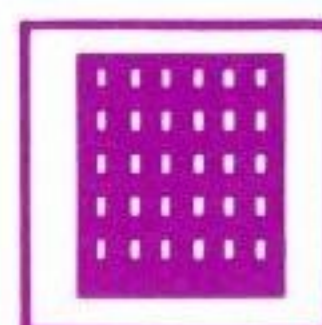
The second way to capture objects is to select the CAPTURE BOX option, then go straight to the OBJECT COUNTER and select the objects you want in the box. The CAPTURE BOX will expand to include those objects. With either method of capturing objects you may delete objects from the influence of the CAPTURE BOX by de-selecting their Object Numbers in the OBJECT COUNTER.

To move objects in the CAPTURE BOX place the cursor within the CAPTURE BOX and drag it to the desired location. To create a new CAPTURE BOX place the cursor on the outside of the current CAPTURE BOX and start from scratch.





## #11 THE COLOR PALETTE



FANTAVISION comes with four PALETTES of 14 colors or patterns. You can cycle through the different PALETTES with the UP and DOWN arrows in the lower left corner. The number between the arrows gives you the number of the PALETTE you're using.

The FANTAVISION colors and PALETTES are created in such a way that you needn't worry about mixing colors as long as you stay within a single PALETTE.

Mixing colors from different PALETTES in a single frame puts you at risk of getting "jaggies" in your movie. You get these jagged diagonal lines on the Apple when you mix certain colors due to the limitations of the hardware.

## #12 OBJECT STATUS BOX



This displays the color and the number of points in the current active object. If you have selected a group of active objects with the CAPTURE BOX, the OBJECT STATUS BOX will display information about the lowest numbered object in the group.

## #13 GO



Selecting GO will run the current Movie. To stop the current movie press the cursor button and the movie will revert to the last frame you were working on.

### WHILE RUNNING KEYBOARD COMMANDS

1-7	Set Speed
Space Bar	Stop Motion
Esc	Escape: If you press <b>Esc</b> when the animation is running, or when you are stepping through the animation using the <b>Space Bar</b> , you can copy the image to the clipboard, so that it can be inserted with PASTE as a new frame. Returns you to current work frame.
Return	Same as <b>Esc</b> . Returns you to last viewed frame.
←	Backward Animation
→	Forward Animation



## #14 GLOBAL



Selecting the GLOBAL command means that changes to an object using the COLOR PALETTE, ANIMATION BOX, or DIMENSION BOX, will be made to that object automatically in all frames in which it appears.

The GLOBAL command looks for all frames in which the object to be changed has the same color (or animation type, or dimension) as in the current frame and changes those frames at the same time. In other words, if you have a blue fish as Object #1 in Frame 1 which you want to change to green, selecting GLOBAL and then changing Object #1 from blue to green will change all frames in which Object #1 was blue, to green. If Object #1 was yellow in Frame 3, it will NOT change to green because the command is "blue to green."

GLOBAL works the same way for changing animation type or dimension, so that you can change a specific Object Number from Outline mode to Dot mode or from Lightning mode to Trace mode etc. The GLOBAL command works on a singular attribute—color, animation style or dimension—not any combination of the three.

## #15 OVERLAY



Activating the OVERLAY command allows you to preserve everything which appears on the screen at any time during the editing process. This enables you to keep your Animation in register, to keep your Background visible as you make your Movie, to study several frames at once, or to save multiple screens as a single Backdrop.

## #16 ANIMATION BOX



There are four animation modes available to you with FANTAVISION. These are:

Normal mode  
Background mode  
Lightning mode  
Trace mode



### NORMAL MODE



An object animated in Normal mode will change from the object drawn in the current frame to the object drawn in the subsequent frame with whatever number of intermediate frames you set when you establish the film speed. (See Keyboard Commands on the inside back cover). As each new version of the object appears, the previous one is erased so that movement appears to be realistic.

### BACKGROUND MODE



Whenever you want an object you draw to become a part of the background you use Background mode. You may use this mode to create a Background at the beginning of your Movie, or you may drop objects into the Background temporarily in order to use their Object Numbers for new animated objects.

**NOTE:** WHENEVER BACKGROUND MODE IS USED, THAT OBJECT NUMBER MUST BE LEFT BLANK IN BOTH ADJACENT FRAMES!

If Object #3 is in Background mode in Frame 4, then Object #3 must not be used in Frames 3 and 5. If Background mode is used in Frame 1, then that Object Number must be left blank in Frame 2 and the LAST frame of the movie. Since the movie will run through a loop, the last frame will precede Frame 1 after the first run through.

If you do not leave both adjacent frames blank then your background will animate.

### LIGHTNING MODE



Lightning mode has two main uses. The first is for creating special effects such as in the SPIDER Movie Demo. Best results are achieved by using a solid object with an outline around it (See DIMENSION BOX, Solids, page 19). The effects tend to look better at slower animation speeds.

You can also use Lightning mode to speed up an animation. This rather complex function is described in detail in APPENDIX II, page 61.

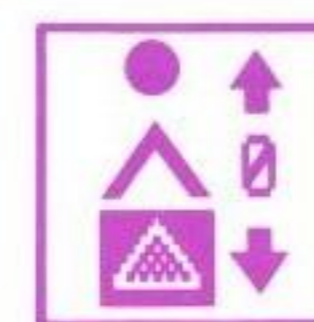
### TRACE MODE



In Trace mode an object will leave its image behind without erasing it. Trace mode is useful for a variety of special effects. Movie demos which show some of the uses of Trace mode include: TRITRACE and VOLCANO.



## #17 THE DIMENSION BOX



Although all the objects in FANTAVISION are drawn by plotting points, the objects themselves may be solid shapes, lines, or dots. The default value for each new object is solid shapes. Within each "dimension" are a variety of modes which give you added options. These are:

#### SOLID SHAPES

0. No outline
1. Black outline
2. White outline
3. Black outline with last segment open
4. White outline with last segment open

#### LINES

0. Outline with last segment open
- C. Connect last segment to close shape
9. Leave a blank segment after 9 are drawn
8. Leave a blank segment after 8 are drawn
7. Leave a blank segment after 7 are drawn
6. Leave a blank segment after 6 are drawn
5. Leave a blank segment after 5 are drawn
4. Leave a blank segment after 4 are drawn
3. Leave a blank segment after 3 are drawn
2. Leave a blank segment after 2 are drawn
1. Leave every other segment blank

#### DOTS

1. Smallest Size
- 2-8. Progressively larger
9. Largest dot size

#### SOLID SHAPES



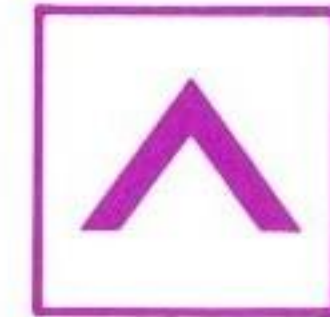
The default value for Solid Shapes is No Outline mode. The DOWN arrow cycles through the other modes. Using either of the two outline modes gives the object a clean, distinct look. When using the Trace or Lightning animation mode the outline keeps the shape of the object distinct against the trail it leaves behind during animation.

**NOTE:** USING OUTLINE MODE WILL SLOW DOWN THE ANIMATION BY HALF!





The purpose of the two modes that leave the last segment open is to allow you to add segments to a solid object without intervening lines. If you want to attach a leg to an elephant, for example, using Mode 3 or 4 on both the body and the leg will enable the parts to appear as a single solid object without a line separating them.



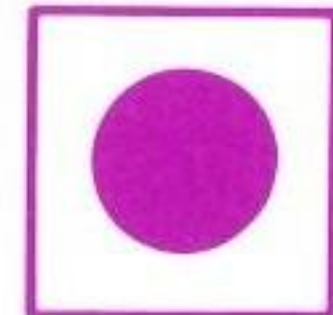
### LINES

Line mode is normally set to "Open." This means that a line is drawn connecting the points you plot but no further. The DOWN arrow puts you in "Closed" mode which will connect the last point you plot with the first one in order to form a solid outline.

The numbered Line modes are reached by pressing the UP arrow. The purpose of the numbered modes is to allow you to draw a variety of seemingly distinct objects which nevertheless all use the same Object Number.

Because the software leaves a blank segment after whatever number of segments you designate, you can use the invisible segment to get to some other point. In this fashion, all the legs of a spider could be a single object if the Line mode is set to 2 (assuming the spider has knees). The third, invisible segment, would be used to move the cursor from the foot of the spider's leg up to the body, in order to draw the next leg. You could also draw several human stick figures and have them use the same Object Number.

### DOTS



The default value for Dot size is 5. Selecting the DOWN arrow makes the Dots bigger (up to size 9), while the UP arrow makes them smaller. The smaller Dots are simply the exact points you plot on the screen. The largest Dot is still made up of only a single point, which is in the center of the Dot. This means you cannot edit the edge of the Dot in any way, since there are no points plotted there.

A large Dot may be indistinguishable from a small circle, except that the circle is made of 16 points and can be edited at its edge and manipulated with the GOODIES MENU, while the Dot has only a single point in its middle and cannot be edited at the edge nor manipulated with the GOODIES MENU (although objects made of **multiple** Dots can be manipulated with the GOODIES MENU). You can have up to 32 Dots using a single Object Number, but only one circle.



## THE PULL DOWN MENUS: #18 THE GOODIES MENU

The GOODIES MENU consists of:



ZOOM

FLIP

TURN

SQUASH

LEAN

plus the two indicators to the right of the word GOODIES, which will look like this when you boot up:  

All GOODIES commands act on all objects in the frame unless you specify which objects you want with the CAPTURE BOX.

ZOOM

When you enter the GOODIES MENU for the first time the ZOOM command is already activated and will have a check mark next to it. Each time you select the outward arrows the object or objects to be zoomed will be enlarged by 12%. Each time you select the inward arrows the selected objects will shrink by 12%.

TURN

When you select the TURN command, two spiraling arrows will appear to the right of the GOODIES MENU. One arrow spirals clockwise, the other counter-clockwise. Each time you select one of the spiraling arrows the object(s) to be turned will rotate 22.5 degrees (16 turns all the way around) in that direction. When you use TURN **without** using the CAPTURE BOX all objects turn around a point in the **center** of the screen. When you capture an object and TURN it, it turns around a point **in the middle of the CAPTURE BOX**.

LEAN

Selecting the LEAN command allows you to lean objects to the left or right by using the left or right arrows.



**FLIP**

The FLIP command allows you to flip the desired object(s) horizontally with the left-right arrow or vertically with the up-down arrow. When you use FLIP without the CAPTURE BOX, the center of the screen is the line over which objects will flip. WHEN YOU USE THE CAPTURE BOX, OBJECTS FLIP WITHIN IT, AND NOT THROUGHOUT THE FRAME.

**SQUASH**

The SQUASH command is used to flatten objects or stretch them. SQUASH can be used to make ellipses out of circles and is useful for creating shadows.

## #19 THE EDIT MENU

The EDIT MENU consists of the following functions:

**UNDO****PASTE****CUT****CLONE****COPY****ZAP**

UNDO and CLONE are the only functions which do not work differently on the Frame level versus the Object level. UNDO works exclusively on the commands indicated by the icons on the left hand side of the screen, plus the COLOR PALETTE. CLONE always means CLONE Frame.

**UNDO**

## 1. UNDO and DRAW

Using UNDO with the DRAW command will UNDO the last point plotted UNLESS that last point was used to close an object.

## 2. UNDO and GRAB POINT

UNDO will return the previous point grabbed to its former position.

## 3. UNDO and INSERT POINT

UNDO will delete the last point inserted.

## 4. UNDO and DELETE POINT

UNDO will restore the last point deleted.



## 5. UNDO and MAKE CIRCLE

The whole circle just disappears with a poof (albeit a silent poof).

## 6. UNDO and MAKE SQUARE

That square's a goner.

## 7. UNDO and TEXT

UNDO will remove the last object typed. Since an object may be made up of as many as four letters, up to four letters may be removed by the UNDO command.

## 8. UNDO and CAPTURE

UNDO will restore an object MOVED with the CAPTURE BOX to its former position. It will not UNDO GOODIES functions. To undo GOODIES functions just do them in reverse.

## 9. UNDO and the COLOR PALETTE

UNDO will undo the last change of color. Colors changed with the GLOBAL command CANNOT be undone with UNDO, you simply have to change them back with GLOBAL.

## 10. UNDO and GO, GLOBAL, OVERLAY, OBJECT COUNTER, BACKGROUND COLOR, FRAME COUNTER.

UNDO doesn't affect any of the above.

## 11. UNDO and ANIMATION TYPE, DIMENSION

UNDO will change back to your last change of ANIMATION TYPE or DIMENSION, though it's just as easy to change it back manually.

**CUT****COPY****PASTE**

(Frame Level)

CUT is one of the three functions that interact with the Clipboard. The other two are COPY and PASTE. When you CUT a frame, the whole frame goes to the Clipboard and replaces anything else that might have been on the Clipboard. Likewise the frame which has been cut **disappears** from your movie. To get that frame back you must PASTE it in front of the frame you want it to precede.

COPY differs from CUT in that it copies a frame to the Clipboard without cutting it out of the current movie.

PASTE enables you to make a single copy of the frame you have CUT or COPIED by selecting PASTE while on the frame you wish it to precede.

**NOTE:** If you press **Esc** when the animation is running, or when you are stepping through the animation using the **Space Bar**, you can COPY the image to the Clipboard, so that it can be inserted with PASTE as a new frame.



**CUT****COPY****PASTE**

(Object Level)

You may also use CUT, COPY and PASTE on the object level by using the CAPTURE BOX. In this case only the objects selected by the CAPTURE BOX are affected. If no objects are selected, the entire frame will be CUT and COPIED. In addition, when you PASTE objects into a frame they will simply be added to the objects already in that frame, rather than creating an entirely new frame. If, however, the number of objects in the current frame plus the number of objects on the Clipboard is more than eight, the extra objects will simply fail to PASTE. Lower Object Numbers have precedence. You may PASTE a single object in a frame multiple times by re-selecting PASTE.

**CLONE**

CLONE is actually short for CLONE frame. Selecting CLONE automatically copies the current frame to the end of the movie. CLONE does not affect the contents of the Clipboard.

CLONE is very handy when you have a very complicated frame that you don't want to have to draw over again. You can just CLONE it to the next frame (presuming that's the current end of the movie) and edit it from there. Sometimes you will "expose" a frame without realizing it, so that when you CLONE there are blank frames between the bulk of the movie and the cloned frame. Just delete the blank exposed frames with CUT.

CLONE is a bit deceiving because nothing seems to be happening when you use it. If you look at the Frame Counter however, you will see that you've jumped to the end of the movie.

When you use CLONE with the CAPTURE BOX it works exactly the same way as without it, except that the CAPTURE BOX stays highlighted even in the newly cloned frame. This is convenient when you are using the GOODIES MENU in an incremental fashion, e.g., slowly rotating a square. You can just select CLONE and then the GOODIES option without having to re-capture the object in every frame.

Remember that even though you may CLONE with an object selected with the CAPTURE BOX, CLONE is still copying the entire frame. You cannot CLONE a selected object from one frame to another (use COPY and PASTE instead).

**ZAP**

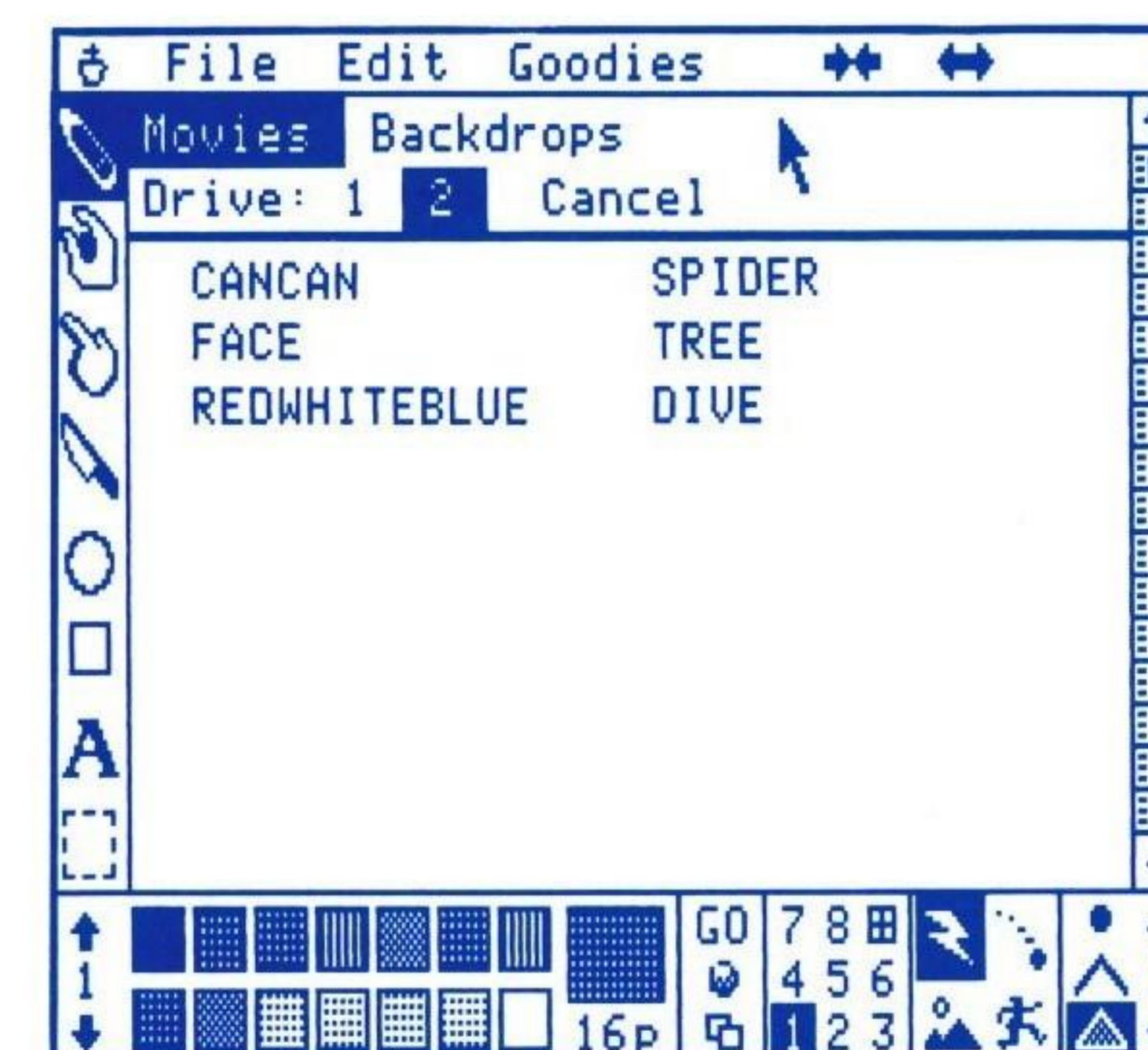
Using ZAP enables you to delete a frame or an object without affecting what's on the Clipboard, whereas CUT replaces the contents of the Clipboard with the CUT material.



## #20 THE FILE MENU

**LOAD MOVIE****SAVE BACKDROP****SAVE MOVIE****CLEAR BACKDROP****CLEAR MOVIE****FORMAT DISK****LOAD BACKDROP****QUIT****LOAD MOVIE**

Selecting the LOAD MOVIE command will give you a screen that looks like this:



To see additional Movie files on the catalog which do not appear on the first screen press the DOWN arrow. To get back to the top of the catalog list again, click over "MOVIES." To select a Movie file, highlight the file name with the cursor and press the cursor button.

Loading a Movie on top of another Movie will result in the first Movie selected—but not the Backdrop, if there is one—being automatically cleared.





### SAVE MOVIE

When you want to save a Movie you've created select this option and the program will ask you for the Movie name. You need to have a "formatted" data disk to save your Movie onto. If you haven't yet formatted a data disk using FANTAVISION, refer back to MAKING A DATA DISK on page 9, or look at the instructions under FORMAT DISK in this menu (page 27). In an emergency you may use a Dazzle Draw or other ProDOS data disk. To get out of the SAVE MOVIE function without saving your Movie, press **Esc**.

To save a Movie to a disk in a second disk drive, select SAVE MOVIE from the FILE MENU, and in response to the prompt, type the name of your Movie followed by a comma and the number 2. For example: Movie name: DIVE, 2.

After this, each time you save a Movie it will be saved to Drive #2. If you want to save to Drive #1 again, simply follow the name of your Movie with a comma and the number 1. The save drive system is separate and distinct from the load drive system. Thus, you may load Movies from Drive #1 and save them to Drive #2 automatically. This will be especially helpful when creating a Show disk.

### CLEAR MOVIE

When you select the CLEAR MOVIE command you will be asked again if you want to clear. Using the CLEAR MOVIE command clears both the present Movie and the present Backdrop.

### LOAD BACKDROP

This function works with the files on the Backdrop catalog in the same manner in which the LOAD MOVIE function works with the files in the Movie catalog. (See LOAD MOVIE on the previous page.) You can also use single hi-res ProDOS file screens from other programs when creating your Movies. Just call up the screen you want from a data disk, and save it to the Backdrop catalog (see SAVE BACKDROP below).

### SAVE BACKDROP

When you want to save a Backdrop you've created select this option and the program will ask you to name the Screen. You need to have a "formatted" data disk on which to save your Backdrop. If you haven't yet formatted a data disk using FANTAVISION, look at the instructions under FORMAT DISK in this menu (page 27).

You may print out individual screens that you create by saving the screen as a Backdrop and then using a screen dump program, such as Printographer by Roger Wagner Publishing, Inc. FANTAVISION is not itself, however, a printing program.



To save a Backdrop to a disk in a second disk drive, select SAVE BACKDROP from the FILE MENU, and in response to the prompt, type the name of your Backdrop followed by a comma and the number 2. For example: Screen name: TREE,2.

After this, each time you save a Backdrop it will be saved to Drive #2. If you want to save to Drive #1 again, simply follow the name of your Backdrop with a comma and the number 1. The save drive system is separate and distinct from the load drive system. Thus, you may load Backdrops from Drive #1 and save them to Drive #2 automatically. This will be especially helpful when creating a Show disk.

To get out of the SAVE BACKDROP function without saving your Backdrop, press **Esc**.

### CLEAR BACKDROP

This function will clear the Backdrop from the present screen without clearing the Movie if one is also present.

### FORMAT DISK

You may format or "initialize" a blank disk on which to save your Movies by selecting this function and following the easy step-by-step instructions.

### QUIT

When you want to leave FANTAVISION, select QUIT and you can boot up another program simply by pressing **Y** for Yes.





Before we begin our walk around the FANTAVISION screen, let's just take a quick look at what FANTAVISION can do. Turn your disk over, boot the back side, and watch the fireworks!

Now that we've given you a small idea of the delights you'll be able to create with the program, let's get started on the Grand Tour. Turn your disk over again, and boot the front side.

As with BARE BONES, this tutorial is organized numerically to correspond to the Diagram of the FANTAVISION Screen on the inside back cover. You can refer to this Diagram to identify the location of each of the features as we go along. You will notice, however, that in this section some of the functions are dealt with out of their numerical order on the Diagram. This is necessary to make a logical progression from one step of the tutorial to the next.

Before you start, clear the screen by pulling down the FILE MENU with the cursor and selecting CLEAR MOVIE.

## #1 DRAW



Okay, let's get started by making a square on the screen. Move the cursor and click it over the DRAW icon. The icon will be highlighted; this lets you know that you are ready to draw.

1. Move the cursor onto the blank screen, place it where you want to begin drawing your square and press the button.
2. Now, press the button again and start to move the cursor around the screen. Notice that there is a line connecting your cursor to the first point you plotted. This line is called a "rubber band." Rubber banding—or pulling this line around the screen—lets you see exactly what the line will look like when you connect it to the next point you plot.
3. Move the cursor to where you want it and then plot the second point by taking your finger off the button. You should now have a straight line connecting your two dots.
4. Place a third dot on the screen. Now you have two sides of your square. To complete the square move the cursor to make a fourth dot and then connect this dot with the first dot you made. You should have a black square.

Next, have some fun with this square you have created. To animate the figure, you need to have several versions of the same object so that FANTAVISION can cycle between them. That is what animation is. But before you do that, you will need to understand a little about the FILM STRIP. (#3 on the Diagram on the inside back cover.)



The FILM STRIP is made up of frames which are the building blocks of the animation and special effects you will create with FANTAVISION. Your square has been drawn in Frame 1. To make it do something interesting, you need to get to Frame 2. To do this:

1. Put the cursor on the DOWN arrow at the bottom of the FILM STRIP on the right and press the button once. (Avoid the DOWN arrow at the very bottom of the screen on the right hand side. That's not part of the FILM STRIP.) The number at the top of the screen should now be 2. Your square has disappeared, and the screen is blank.

2. Press the UP arrow and your square will return. Press the DOWN arrow again, and your square will be gone. The UP arrow gets you up the FILM STRIP to the beginning, the DOWN arrow gets you down the FILM STRIP to the end. We'll go into more detail about the FILM STRIP later on. (See #3 on page 47.)

3. Now draw an object in Frame 2. This time make a triangle by placing three points on the screen before closing the shape. You should now be looking at a black triangle.

Two frames are sufficient to make a movie, however short. Let's run the movie. Place the cursor on the word GO located near the middle on the bottom of the screen (#13 on the Diagram on the inside back cover.) The program will now automatically loop through your animation continuously. You have just made your first special effect. Congratulations!

To stop your animation you have two choices. Pressing the cursor button or **Esc** will return you to the last frame you were working on; in this case Frame 2. Pressing **Return** will send you to the next frame in the animation, which could be either Frame 1 or 2 depending on where the animation is in its loop. Use the cursor button in this case so we end up on Frame 2 together.

With FANTAVISION it is not necessary to create your object with an equal number of points in every frame. You'll recall that to draw your square you plotted four points. To draw the triangle you plotted three. There is a limit of 32 points per object. If you try to place a 33rd point in an object you are drawing, the program will tell you "OBJECT FULL." You can, however, continue to refine your object, and we'll explain how when we get to Object Numbers and the OBJECT NUMBER COUNTER (See page 34).

## #4 GRAB POINT



1. Select the GRAB POINT command.
2. Move over to one of the corners of your triangle.
3. Press the button and move the cursor. You will notice the rubber banded lines which show you what your shape will look like. Move your shape around a little bit and then run the animation again.





Where a lot of points are close together it can be difficult to GRAB the one you want. By using the rubber band effect you can see which point you've grabbed, and then move the points you don't want out of the way until you get the one you do. When you've situated the point you want where you want it on the screen, you can then move all of the other points back where they belong.

## #5 INSERT POINT



1. Place the cursor over the INSERT POINT icon and move the cursor toward your shape to a position in the approximate middle between any two adjacent points.

You must go to the approximate middle between adjacent points to insert the new point. If you then want to move the point closer to one or the other of the adjacent points that's fine, but FANTAVISION won't know what you're up to if you try to insert a point too close to one adjacent point and too far from the other.

You cannot insert a point by putting the cursor in the middle of your square or your triangle. You must insert the point on an edge, and then move it from there.

2. Press the cursor button. When you move the cursor around, you should get a rubber banded image that shows you where your new point will be once you release the button. If you're not getting the rubber banded image you may be too close to one of the points you're trying to insert between. Make sure you are near the middle and that those two points are actually adjacent.

3. Try inserting points all over the place on both your triangle and your square. You'll soon learn how to get rid of them should you add more than you really want. You might want to click GO again right here and see how your animation looks now.

## #6 DELETE POINT



1. Select the DELETE POINT command.
2. Now move the knife to any of the points in your object (the points are at the corners) and press the button. Notice that the two dots which were connected to the dot you erased are now connected to each other. Run your animation again.



If you deleted one corner of your triangle you got a straight line, and you saw that your animation would still work. You can delete one end of the remaining line and you'll just have a point. You can still run your animation. Delete this final point, though, and you can't run the animation anymore. There's nothing for your object in the other frame to change into. Before we proceed to the next function, you'll need to clear your screen. To do this just pull down the FILE MENU (#20 on the Diagram on the inside back cover) and select CLEAR MOVIE.

## #7 MAKE CIRCLE



MAKE CIRCLE works by setting the mid-point of the circle wherever you first click your cursor button. The first point in the circumference of the circle is plotted wherever you release the button. Knowing the location of the first point in the circle is important when you are planning your animations. If your circle doesn't look like it's going to end up in the right place just move the cursor off the drawing screen and begin again.

1. Let's start by selecting MAKE CIRCLE and placing the cursor somewhere on the screen. Press the button, then move the cursor straight up 2 or 3 inches before releasing it.

2. Now do the same thing in Frame 2.

3. For Frame 3 press the cursor button, then bring the cursor to the right several inches before releasing it. Press GO to run the animation.

Notice that while the transition from Frame 1 to Frame 2 is relatively straightforward (presuming you drew your circles more or less the same size), the animation from Frame 2 to Frame 3 and from Frame 3 to Frame 1 makes it appear that the circle is rolling. That's because the point at which you release the cursor button is considered the first point in the circle. The first point of the object in one frame moves to the first point of the object in the next frame, so the circle appears to roll to the right and then back again.

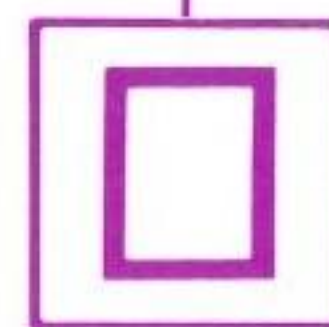
4. Now let's draw another circle in Frame 4, only this time move the cursor off to the left and release the button. Run the animation. You'll notice at one point your circle appears to get very small. That's because the points between Frames 3 and 4 are switching places, since you went to the right with the cursor in one case, and to the left in the next. During the transition they meet in the middle, so the circle appears small.

You will learn later in this tutorial how to change your circle from a solid to an outline to a circle of dots. You may wish to know how to change the speed of your animation since solid circles have been known to move slowly unless prodded. Look under the section entitled KEYBOARD COMMANDS on the inside back cover. If you can keep a secret, we'll tell you right now that the number keys 1 through 7 are your speed controls, with 1 being the fastest speed and 7 the slowest. The slower you go the smoother things will appear to move.





## #8 MAKE RECTANGLE



MAKE RECTANGLE is very similar to MAKE CIRCLE except that a rectangle is made of only 4 points. The first point will be plotted when you press the cursor button; the third point will be plotted when you release it.

1. CLEAR the circle demo you created.
2. With the cursor select MAKE RECTANGLE from the left hand side of the screen.
3. Move the cursor onto the blank screen and plot a point near the center of the screen by pressing the button to assign one corner of the square.
4. Hold the button down and drag the cursor down and to the right to create a square or a rectangle.
5. Now go to Frame 2 and make a square starting at the lower right corner, then dragging the cursor to the upper left. Click over GO to run the animation. Once again we've simply flipped the location of point 1 from one side of the object to the other as we did with circles, so that the object at one point seems to practically disappear.

## #9 TEXT



There are two ways of putting text into FANTAVISION movies. The primary way is to select the TEXT icon and follow the steps outlined in this section. The text that you get in this mode is simple and easy to use and manipulate. A secondary way of handling text, using movie files with special fonts in them, is covered in APPENDIX II, "Using Fonts from the Demo Disk" (page 59).

CLEAR the screen of any previous demos before starting this section.

Select TEXT by pressing the cursor button over the "A" on the left hand side of the screen. Move near the left side of the blank screen, click the button and type (slowly, please) the following:

**I LOVE DOGS**

If you suddenly find that you're looking at a catalog of movies instead of **I LOVE DOGS**, that's because you forgot to click the cursor button. Without that click the program thinks you are giving it keyboard commands, rather than typing in characters. Select CANCEL to get back to where you want to be.



If you find you don't have room to write **I LOVE DOGS** select ZAP from the EDIT MENU and start over farther to the left. Now look at the OBJECT COUNTER. Notice that you are on Object Number 3. This is because you have typed nine characters. Each Object Number can hold four characters, then the software automatically increments to the next available Object Number that has nothing in it. Spaces do not count. Thus the **S** in **DOGS** is the first character in the third Object Number.

If you make a mistake while typing, use the left arrow to delete backwards one character at a time. Retype whatever you erased correctly. Now press **Return**. Your cursor should revert to its familiar arrow shape.

Give some thought to what you've just done. You may have seen on the FANTAVISION demos that it can be a lot of fun to make text spin around and flip and so on as is done on television. But even if you just wanted to color the words **I**, or **LOVE**, or **DOGS** different colors right now you would have a problem. That's because Object #1 consists of the first four characters, **I LOV**, Object #2 of the next four, **E DOG**, and Object #3 of the last **S**. If you try to color any of your objects you will wind up with an odd mix of letters responding to your commands.

Try this by simply clicking the cursor on one of the colors in the COLOR PALETTE at the lower left. Notice how just the **S** changed color. Move back to Object #2 and try a different color. It's something of a mess.

What we want is to have each of the words respond as if it were an object unto itself. To do this we use the right arrow. CLEAR the screen and type again, only this time press the right arrow after **I** and **LOVE** (the right arrow will substitute for the **Space Bar**). Press **Return** when you're done. Now select a color from the COLOR PALETTE. See how the entire word, **DOGS** changes color?

### RE-OPENING AN OBJECT NUMBER WITH TEXT IN IT

Go back and change the colors of Objects #2 and #1. You should have each word now in a different color. Put the cursor down below and type the words

### VERY MUCH

Now the colors in the words **VERY** and **MUCH** may be quite mixed up. That's because when you started typing again, you were back on Object #1, which had room for three more characters in it, since it only contained an **I**. Once you got to the **Y** in **VERY** the program jumped to the next available Object Number which was #4, because **LOVE** and **DOGS** used up Object Numbers 2 and 3. Therefore, **Y MUCH** should be in black, since no color was selected.

"ZOUNDS!" you say, determined to clean up the problem. Go to the left arrow key and start deleting. Wait a minute! What's happening? Once we got through the **Y** in **VERY** it started erasing the word **DOGS** instead of the **VER**. That's because the **VER** belongs to Object #1 with the **I**. The delete function works backwards down through the Object Numbers so that it went from Object #5, **H**, down through **MUC** to **DOGS** which was Object #3. It skipped **VER** because that's part of Object #1 which you haven't gotten to yet. Delete back through all the letters and you'll see how it works.





## #2 OBJECT COUNTER

1

You'll use this feature a lot as you work with FANTAVISION. It will tell you what object you are working on at any given time. CLEAR the screen of your text and we'll start on another project here.

1. Start by making a simple triangle again. If you next try to plot another point to start a new object you'll hear a beep when you push the button.

2. You can use the OBJECT COUNTER to tell the software that you are finished with one object and want to work on the next one. To do this you need to select another object number. Go down with the cursor and click over number 2.

3. Now, go back to the screen and draw a new shape directly on top of the old one. This time you shouldn't have any trouble.

You do not need to work on objects in any numerical order. However, the higher the Object Number the greater the priority of the object. In other words, if you draw Object #1 and Object #2 in exactly the same place, only Object #2 will be visible. You've already drawn two objects on top of one another, but since they're both black it may be a little unclear what's going on.

To illustrate how this works we'll need to use the COLOR PALETTE (#11 on the Diagram on the inside back cover).

4. Move down to the COLOR PALETTE and click the cursor over one of the colors. You should be looking at a triangle that is filled in with the color you selected.

5. Next click Object #1, then move down to the COLOR PALETTE and click the cursor over another color. Not much should change because regardless of what color you make Object #1 it won't be visible if Object #2 is on top of it.

### ANIMATING MORE THAN EIGHT OBJECTS IN YOUR MOVIE

It is possible to have any number of objects animated in your movie as long as no more than eight are animated at one time. You can introduce a new object and delete an existing object at practically any time.

MORAL: You can enter text into an object which already contains text. You can write poetry with a pen held between your toes. The results of both can be confusing.

The **Esc** key will get you out of TEXT.

To delete an object simply do not use that Object Number for at least one frame. To introduce an object in the middle of a movie just make sure that the Object Number you want to use was not used in the previous frame.



To illustrate how this works:

1. Load the Movie Demo called "Objects." If you need to refresh your memory on how to load demos, refer back to Loading Movie and Background Demos on page 25.

You will notice that there are eight objects on the screen in Frame 1. Objects #1, #2 and #3 are the rectangles to the left on the screen, Objects #4, #5, #6, #7, and #8 are the colored balls on the right. Now click to Frame 2. Again the same eight objects appear, but in different positions. The same is true of Frame 3. But when we get to Frame 4, Objects #4-8 are the only objects on the screen. Objects #1-3 have not been used.

2. Now click to Frame 5. Objects #4-8 are still the same colored balls, but Objects #1-3 have been used to create a juggling stick man. By not using Objects #1-3 in Frame 4, those Object Numbers were freed up to represent something other than the rectangles drawn in the first three frames.

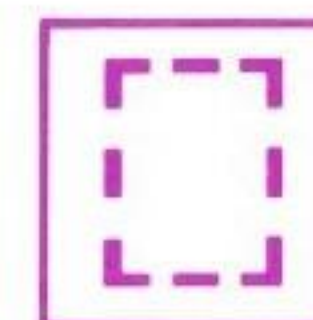
3. Now click through Frames 6-8 to Frame 9. Here again in Frame 9, Objects #1-3 have not been used, thus allowing those Object Numbers to represent something else—in this case it will be the original rectangles—as the animation loops from Frame 8 through Frame 9 and back to Frame 1. To see how it all looks, just click the cursor over GO, and sit back and watch the show.

The "French Window" to the right of the number 8 in the OBJECT COUNTER is used for several purposes. In regular mode selecting this window means you are working on the background color. In this case the OBJECT STATUS BOX (see page 38) will show the Background color and the total number of points in the frame. The French Window also gives you access to two special FANTAVISION functions. See Looping in APPENDIX I (page 58), and Clipping Window in APPENDIX II, (page 60).

4. Click over the French Window and then select a color from the PALETTE. Presto, a color fills the background of the Movie Demo.

There are other things you can do with the OBJECT COUNTER, and we'll get into those when we discuss the CAPTURE BOX, next.

## #10 THE CAPTURE BOX



You'll use the CAPTURE BOX when you don't want to edit a whole frame at once. To explore this function of FANTAVISION you will need to load the Movie Demo called "Face."

1. Pull down the FILE MENU, choose Load Movie, and then select Face from the catalog list.

2. Select CAPTURE BOX in the lower left hand corner, beneath the A. Your cursor will now behave in the same way it did when you were making squares or rectangles. In this case, however, you are going to use it to "capture" objects on the screen and move or edit them.





3. In order to use the CAPTURE BOX you must completely surround the object you wish to capture. Let's practice by placing a capture box around the face on the demo. Move the cursor to a place above and to the left of the face.

4. Press the button, then drag the cursor diagonally to the corner below and to the right of the face, and then release it. Notice that the CAPTURE BOX will shrink to surround any objects within it when you release the button.

5. Now take a look at the OBJECT COUNTER. The Objects #1, #2 and #3 are highlighted in black. This indicates that the face on the screen consists of three objects. In this case the two eyes are Object #1, the nose is Object #2, and the mouth is Object #3.

There is a second way to define the objects you want to capture. When you select the CAPTURE BOX, and then go directly to the OBJECT COUNTER, you can select the objects you want the box to capture by their number. Let's try it.

1. Click the cursor once on the outside of the CAPTURE BOX. The CAPTURE BOX will disappear, and Objects #1, #2 and #3 will no longer be highlighted in the OBJECT COUNTER.

2. Select Object #1. The CAPTURE BOX will enclose the eyes (actually it will only enclose the center of the eyes, and you'll understand why when you read about Dots).

3. Click Object #2. The CAPTURE BOX should now surround the eyes and nose.

4. Finally, click Object #3. The CAPTURE BOX should now encompass the whole face.

#### MOVE WITH THE CAPTURE BOX

If you place the cursor within the existing CAPTURE BOX, the objects within that CAPTURE BOX will move around on the screen with your cursor. Let's do it and see what happens.

1. Move the cursor to a point inside the CAPTURE BOX that surrounds the face and hold down the button.

2. Now move the cursor to the left. The frame of the CAPTURE BOX will move with you.

3. Release the button. The objects that were inside of the CAPTURE BOX will move over and join the frame. Try moving the face around to several different places on the screen.

4. Select Object #2 in the OBJECT COUNTER. What happened? You probably can't see much difference except that the number 2 is no longer highlighted. In a moment you'll see what you've done.

5. Object #1 and #3 are highlighted in black in the OBJECT COUNTER. Place the cursor within the CAPTURE BOX, press the button and move the cursor to the left or right. The nose stayed put, didn't it? That's because you took the nose out of the CAPTURE BOX just a moment ago when you clicked Object #2.

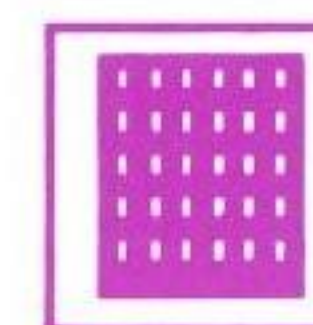


6. To put the nose back, place the cursor outside of the existing CAPTURE BOX and capture the nose.

7. Put the cursor inside the CAPTURE BOX and drag it over to its proper place with the other figures. When you release the button, the nose will be back where it belongs.

When multiple objects are within the CAPTURE BOX, the object information display (See OBJECT STATUS BOX on page 38) regarding color, number of points, animation type and dimension type refers to the lowest numbered object within the CAPTURE BOX.

## #11 THE COLOR PALETTE



At the bottom left of your screen are two rows of colored squares. To the left of the color squares are an UP arrow, a DOWN arrow and the number 1. This is your COLOR PALETTE.

There are four PALETTES. The number 1 on the left indicates that you are using PALETTE #1. You can move between the PALETTES by clicking the UP and DOWN arrows. To select the color of the object you are working on you simply click the cursor on the color you want. The color will appear in the OBJECT STATUS BOX—the larger box on the right of the PALETTE.

The FANTAVISION colors and palettes are created in such a way that you need not worry about mixing colors as long as you stay within a single PALETTE. Mixing colors from different PALETTES in a single frame, however, puts you at risk of getting "jaggies" in your Movie. Due to the limitations in the hardware, you get jagged diagonal lines on the Apple when you mix certain colors.

Okay—now's the time to experiment with changing the colors of the different objects that make up our face.

1. Select Object #1 from the OBJECT COUNTER box. Right now the color of Object #1 is blue.

2. Move the cursor over to the PALETTE and select a different color by moving the cursor and clicking over the color. The color in the object on the screen will change, as will the color in the OBJECT STATUS BOX.

3. Now, run through the different PALETTES and select other colors. Move to Objects #2 and #3 and experiment some more.

Note that in this case you can only change the colors in the frame you are working on. In other words, if you change the color of Object #1 in this frame, you will not have changed the color of Object #1 in other frames. Let's give it a try and see what happens.

1. Click to Frame 2. Notice that the eyes here are still blue.

2. Now click back to Frame 1. The eyes will be whatever color you last changed them to.

You will learn how to change the color of the eyes of both frames in one fell swoop when we get to the GLOBAL command.





## #12 OBJECT STATUS BOX



The OBJECT STATUS BOX is a useful tool for figuring out what the Object Number is of a certain object when you can't remember, or for keeping track of how many points are in an object.

The OBJECT STATUS BOX gives you information about the color and number of points in the object which has been highlighted in the OBJECT COUNTER.

For example:

1. Select GRAB POINT and grab the nose of the face. Notice that the OBJECT STATUS BOX shows the color of the nose, the fact that the nose is made up of 9 points, and that the Object Number, as indicated by the OBJECT COUNTER, is 2.

2. Now select DELETE POINT and delete one of the eyes. Did you see that the number of points changed from 2 to 1 as you did so?

Here's a little test of what you've learned to this point that shows how useful the OBJECT STATUS BOX can be.

1. Select MAKE CIRCLE.

2. Change the OBJECT COUNTER to #4 and the COLOR PALETTE to the color of the remaining eye.

3. Now draw an eye to replace the one you cut out. The left and right eyes should look pretty much the same. If you were unfamiliar with the animation you might think that both eyes could be edited in the same way.

4. However, select DELETE POINT again and try deleting the new eye you built. This time you can see that the eye is made up of 16 points by looking in the OBJECT STATUS BOX, so it's going to take you a lot longer to get rid of it.

There are lots of editing functions which work differently on an eye made of 16 points than on one made of 1 dot. Looking at the OBJECT STATUS BOX can save you a lot of confusion in cases like this one.



## #13 GO



As you have learned, selecting GO will make your Movie run. That part is simple. But after your Movie is running there are all kinds of things you can do to it.

These include:

1. Selecting keys 1-7 to change the speed of the Movie
2. Pressing the **Space Bar** to step through your Movie
3. Pressing the left arrow to make your Movie run backwards
4. Pressing **ESC** to save the present image to the Clipboard
5. Pressing **Return** to stop the Movie at the current frame
6. Pressing the cursor button to stop the Movie at the last frame you were working on

Whatever speed you leave your Movie in when you save it is the same speed it will default to when you next load and run it.

You haven't learned to use the Clipboard yet, but when you do you will find it very handy to save any part of your animation to it, then paste it in somewhere else. This means that you can save a frame which you did not actually draw, and enables you to smooth out your animation wherever it seems too jerky.

Whenever you stop your animation with the **Space Bar**, you can continue stepping through the animation by pressing the **Space Bar** again or you can press one of the speed keys to restart the animation.

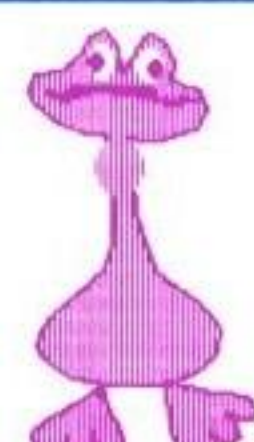
This would be a good place to load the DIVE demo and have some fun with it by trying out all of the various features that work with GO.

## #14 GLOBAL



CLEAR your screen to start this section.

1. Use MAKE RECTANGLE to draw rectangles in each of the first three frames.
2. Now select GLOBAL which is right underneath the word GO.
3. Go over to the color palette and select any color other than the one you used to draw your squares. Notice that when you run the Movie, all the squares have changed color.
4. Now try selecting a different DIMENSION, such as Dots (In #17 box on the screen Diagram), and run your animation again. Once again the object has changed to Dots throughout. Be sure the solid triangle is highlighted in the DIMENSION BOX before you proceed to step 5.
5. Turn GLOBAL off and change the color of the present rectangle. Run your animation and notice how the color of the other rectangles did NOT change.





6. Stop your animation with the cursor button. Select GLOBAL again. Change the color of your rectangle yet again. Run the animation. What happened? The rest of your animation still did not change despite the fact that you had the GLOBAL command on. Why not?

The GLOBAL command looks for objects (of the same Object Number) with the same color and changes them to the new color. In other words, if you had changed your one object to green and all the rest were black, changing the green one to yellow even with GLOBAL on won't have any effect because the program is looking for a green object to change, not black ones.

GLOBAL will search all frames for the object number you wish to change and change the ones that match only that single attribute you want changed. If you're changing color, it doesn't care about animation type or DIMENSION. If you're changing DIMENSION it will ignore animation type and color.

**NOTE:** DON'T LEAVE THE GLOBAL COMMAND ON WHEN YOU AREN'T USING IT. YOU CAN MAKE A BIG MESS IN A HURRY!! You should click GLOBAL off right now.

## #15 OVERLAY



The OVERLAY command preserves everything that you put on the screen regardless of what frame you are on. This is useful for studying several frames at once and making sure that your objects move along the paths you want them to move along. The OVERLAY command does not preserve everything shown on the screen during an actual animation.

1. Turn on the OVERLAY command and click through the frames of the little animation you created above. Your screen should now be kind of a mess.

It is important, now, that you understand the significance of the term current frame. Although you can see the objects from every frame on the screen when you are using OVERLAY, you can only work with that object which is actually in the current frame as indicated up in the right hand corner.

2. Take the GRAB hand and try grabbing the points from the various objects on the screen. Notice that there is only one of the objects that you can do anything with.

Try loading the DIVE demo and step through all the frames with the OVERLAY command on. Be sure to click OVERLAY off before you proceed with this tutorial.



## #16 ANIMATION BOX



at a time:

### NORMAL MODE



This is the mode we have been working in thus far. An object animated in Normal mode will change from the object drawn in the current frame to the object drawn in the subsequent frame with whatever number of intermediate frames you set when you establish the film speed. (See KEYBOARD COMMANDS on the inside back cover).

As each new version of the object appears the previous one is erased so that the movement appears to be realistic. That's what happened with the triangle and square you animated in the section on DRAW, remember? (See page 28) FANTAVISION is always set in this mode in Frame 1 and will remain in this mode through all the objects created in this frame unless you select another of the four animation modes. Beginning with Frame 2 the program will change to whatever mode you choose for Frame 1.

### BACKGROUND MODE



This mode lets you "drop" objects to the background that you have drawn with FANTAVISION. There can be several reasons you want to drop objects to the background. One is so that they can serve as a "set" for your Movie. As an example of this you might create a row of buildings so that you can animate a little car driving in front of them.

Another primary reason for dropping objects to the background is simply to free up their Object Numbers in order to animate something else (A background object just sits there so we no longer need to keep track of it with an Object Number).

A third important reason for dropping objects to the background is to speed up your animation. The more things a computer has to keep track of, the slower it goes. If you draw a face and just want to wiggle the nose, you might drop the rest of the face to the background so the nose will wiggle faster.

In most instances, you'll want to create a background at the beginning of your Movie. But you can also temporarily drop objects into the background in order to use their Object Numbers for new animated objects.

Let's try an example:

1. Begin by selecting the Background icon in the ANIMATION BOX.
2. Next, select MAKE RECTANGLE, draw a large square in the center of the screen, and give it a color.





3. Click to Frame 2, leave it blank, and then go on to Frame 3.

4. In Frame 3 select the Normal animation mode (the little running man), then draw a triangle in the center of the screen, and assign it a color different than that of the square in Frame 1. Click to Frame 4 and draw yourself another triangle. Click to Frame 5 and leave it blank. Now run your animation. Notice that the square you drew stands still while the triangle moves at first, then disappears while the Movie cycles through those frames in which the Background is drawn.

You'll recall that after we created the Background square in Frame 1, we left Frame 2 blank. We also left a blank frame at the end of the sequence.

**NOTE:** WHENEVER BACKGROUND MODE IS USED, THAT OBJECT NUMBER MUST BE LEFT BLANK IN BOTH ADJACENT FRAMES!

For example, if Object #3 is in Background mode in Frame 4, then Object #3 must not be used in Frames 3 and 5. As in the exercises above, if Background mode is used in Frame 1, then that Object Number must be left blank in Frame 2 and the LAST frame of the Movie. Since the Movie will run through a loop, the last frame will precede Frame 1 after the first run-through.

If you don't leave both adjacent frames blank, then your background will animate. Try cutting Frame 5 from your demo above (select CUT under the EDIT MENU while on Frame 5) and see what kind of problem that creates. To erase the background, use Clear Backdrop in the FILE MENU.



### LIGHTNING MODE

CLEAR your previous demo before starting on this section. This mode gives the animation you create a "lightning" or "psychedelic" effect by flashing the in-between frames. The best results are achieved by using a solid object with an outline around it.

To illustrate this you need to have objects with outlines around them, which means you'll have to use one of the functions in the DIMENSION BOX (Item #17 on the Diagram on the inside back cover). We'll go into the DIMENSION BOX in detail later on, but for right now:

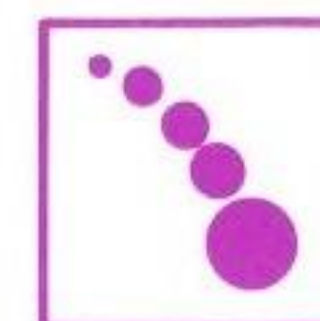
1. Click the DOWN arrow in the lower right corner of your screen so that the 0 above it becomes a 1.
2. Next, select a nice gaudy color like yellow from the COLOR PALETTE.
3. Go over and select the Lightning mode icon, then select and draw a square with MAKE RECTANGLE.
4. Move to Frame 2, draw another square in a different location and select another color. Do the same thing in Frame 3.
5. Use your keyboard to select a slower running speed, say 6, (this function works better at slower speeds) and then run your animation.

An example of a demo that uses Lightning mode for this effect is SPIDER.



Advanced users may wish to use Lightning mode to speed up their animation. As this deals with a more complex aspect of FANTAVISION, we've dealt with it in some detail in APPENDIX II on page 61. An example of this usage is found in the demo MORFIC.

### TRACE MODE

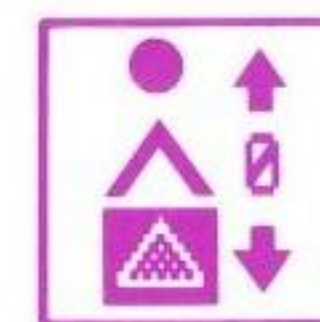


Using the Trace mode means that the object you create will leave its image behind without erasing it. It's useful for creating a variety of special effects.

To practice using Trace mode simply use the GLOBAL command and then change the demo above from Lightning mode to Trace mode. Try running the animation at different speeds (keys 1-7) to see the different effects.

Examples of demos that make use of Trace mode are VOLCANO and TRITRACE.

## #17 THE DIMENSION BOX



CLEAR your Movie before starting on this section. All of the objects in FANTAVISION are drawn by plotting points, but the objects themselves may be solid shapes, lines or dots. The icons in the DIMENSION BOX indicate each of the three variations available when creating an object. Within each of these variations—or "dimensions"—there are a variety of modes which give you added options. Each of the options is numbered, and you activate the options by using the UP and DOWN arrows to select the number you want.

### SOLID SHAPES



The normal starting value for each new object is Solid Shapes. This means that unless you tell the computer otherwise, the objects you create will be filled in once they are closed. During most of this tutorial, you have been working with this dimension. It should be highlighted in the lower right hand corner of your screen right now. The optional modes available with Solid Shapes are:

- 0. No outline
- 1. Black outline
- 2. White outline
- 3. Black outline with last segment open
- 4. White outline with last segment open

Let's take a look at the options one by one:

#### 0—NO OUTLINE

Note that the digit between the UP and DOWN arrows is set at zero.

1. Click over the French Window in the Object Counter and choose a background color other than black or white.





2. Now move the cursor and click Object #1, select another color, and then draw a medium-sized triangle in the middle of the screen. The shape is solid, but has no outline around it.

3. Draw a similar triangle somewhere else on the screen in Frame 2.

4. Turn the GLOBAL command on. Run your animation to get a sense of how fast it moves. It will move more slowly once you put an outline around it.

### 1—BLACK OUTLINE

1. Stop the animation and move the cursor to the DIMENSION BOX. Click over the DOWN arrow once. The number 1 will appear, and look at what has happened to your triangle. It should now have a black border around it.

2. Run your animation again to see how much the outline slows things down.

### 2—WHITE OUTLINE

1. Click the DOWN arrow to move to #2. Now you have a white outline around the triangle.

2. Run it again.

### 3—BLACK OUTLINE WITH THE LAST SEGMENT OPEN

Stop the animation, and click the DOWN arrow to #3. Two sides of the triangle are outlined in black, and the third side has no outline. This option allows you to add another object to a solid object without there being an intervening line.

Before you proceed be sure to click GLOBAL off.

To illustrate, let's run the triangle into a rectangle.

1. Select #2 in the OBJECT COUNTER.

2. Select the same color for the second triangle that you used for the first triangle, and click the DOWN arrow in the DIMENSION BOX back to 3.

3. Attach a second triangle to the first to create a rectangle, making sure that the last side of the new triangle is parallel to the open side of the first triangle. You should now have a rectangle or a parallelogram.

If there's a little "light" coming through where the two triangles join, you can adjust that by selecting GRAB and fine tuning a little bit.

### 4—WHITE OUTLINE WITH THE LAST SEGMENT OPEN

This option works the same way that Option 3 works, only with a white outline.

1. With Object #1 highlighted, click the DOWN arrow up to 4.

2. Now highlight Object #2 and do the same.

**NOTE:** You might want to leave one side without a border for drawing elephant legs...or for bending elbows.



Using the outline modes will give your objects a clean, distinct look. When using Trace or Lightning, Outline keeps the shape of the object distinct against the trail it leaves behind during the animation.



## LINES

CLEAR your previous demo before proceeding with Lines. With the Lines function you can create an object that will not be filled in as it would be in the Solid Shapes mode.

1. Select the Line icon, pick a color, and then plot a shape. This time, when you return to Point #1 to close the shape the object is not filled in.

The various Line modes are designated by the letters C (Closed) and O (Open), and the numbers 9 through 1:

- O. Outline with last segment open
- C. Connect last segment to close shape
- 9. Leave a blank segment after 9 are drawn
- 8. Leave a blank segment after 8 are drawn
- 7. Leave a blank segment after 7 are drawn
- 6. Leave a blank segment after 6 are drawn
- 5. Leave a blank segment after 5 are drawn
- 4. Leave a blank segment after 4 are drawn
- 3. Leave a blank segment after 3 are drawn
- 2. Leave a blank segment after 2 are drawn
- 1. Leave every other segment blank.

Each time you select Lines the capital letter O will appear between the arrows. This stands for "Open," and is the standard setting for Lines.

You would need to select a numbered option if, for example, you wanted to create a spider with four legs. Each of the four legs would be a line created by two segments—assuming the spider has knees. Ordinarily to draw four separate legs you would have to assign four separate object numbers, one for each leg. Otherwise, when you move your cursor back to the body of the spider to draw the next leg, a straight line would appear connecting the foot of the spider to the body (which you don't need, since you've already drawn the leg). Since you can only animate eight objects in each frame, being able to draw a bunch of different line segments with just one Object Number could come in pretty handy.

With the numbered options, Lines mode can get around the problem with the spider's legs by telling the computer to leave blank the line connecting the foot to the body. In this fashion we can make as many as 10 spider legs all using the same Object Number (it takes 3 points to define the leg and we've got 32 points available per Object Number).

Here's how we do it.

1. Draw a regular Solid Shape with Object Number 1. Make it ugly.

2. Now select Object Number 2, change to Line mode in the DIMENSION BOX, and click the UP arrow until the number 2 appears between the arrows.

3. Now, starting with the body, make about 4 spider legs each made of two segments.

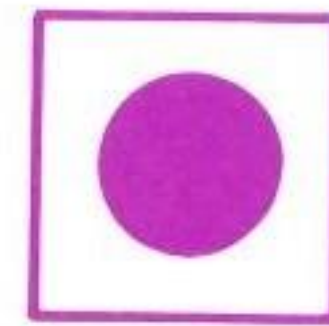




The stick figures in the demo CANKAN on the front side were created with just two object numbers by designating "6" while in Line mode.

#### CLOSED MODE

Closed mode is reached by clicking the DOWN arrow from Open mode. Closed mode works by automatically connecting the last point you plot in an object to the first one, whenever you change object numbers or frames. This saves you the effort of having to place a point exactly on top of the first one you plotted.



#### DOTS

**CLEAR** your screen. This DIMENSION BOX function lets you instantly create dots of varying sizes. Here you will use the UP and DOWN arrows to indicate what size you want your Dot to be. The default value for the Dot size is 5. To make the Dot larger, click the DOWN arrow to get larger numbers. To make it smaller, click the UP arrow for lower numbers.

1. With your cursor, click over the Dot icon. The number 5 will appear between the UP and DOWN arrows.
2. Move over to the PALETTE, choose a color, and then click a Dot onto the screen.
3. Now, go back and click the DOWN arrow. It will count up to the number nine. Watch and see what happens to your Dot.
4. Next take a look at what happens to your Dot when you click over the UP arrow until you reach the number 1. There you have it. Instant heads for stick figures, balls for bouncing, etc.

The smallest Dots are simply the exact points you plot on the screen. The largest Dot is still made up of only a single point, which is in the center of the Dot. This means you cannot edit the edge of the Dot in any way, since there are no points plotted there. Neither will any of the GOODIES functions change the shape of a single Dot. Only the Dot size can be changed by selecting 1-9.

A large Dot may be indistinguishable from a small circle, except that the circle is made up of 16 points and the Dot only one. You can have up to 32 Dots using a single Object Number, but only one circle. Circles **can** be edited and manipulated with GOODIES.

You can change the DIMENSION of anything at any time, so you may get a kick out of changing objects in the various demos to Dot mode and back again.



## #3 THE FILM STRIP



We touched briefly on the FILM STRIP when we were discussing the DRAW function. You already know that the FILM STRIP is made up of frames, and that you need to create objects in at least two frames in order to make those objects "move."

It will help to have a Movie demo to illustrate how the FILM STRIP works, so right now pull down the FILE MENU and select Load Movie. When the catalog appears, choose DIVE, the Movie Demo we used earlier.

There are sixteen squares in the FILM STRIP. Each one of those squares represents eight frames in your Movie. You are allowed a maximum of eight animated objects per frame. (Each "object" can have up to 32 points.) You can move through the various frames by clicking over the UP and DOWN arrows. You can tell what frame you are located in by checking the FRAME COUNTER in the upper right hand corner of the screen. Right now you are in Frame 1 of the DIVE Movie Demo. The black block in the first square under the UP arrow indicates that Frame 1 is located in that square.

1. Click over the DOWN arrow until the FRAME COUNTER reads number 9. Notice that the black block dropped down to the second square indicating that Frame 9 is located there. The green block tells you how much "exposed" film you have.

2. Click over the DOWN arrow until the FRAME COUNTER reads 25. (You can do this rapidly with a mouse, KoalaPad or Apple Graphics Tablet by holding down the cursor until the COUNTER reaches the number you want. "Dragging" the cursor up or down the FILM STRIP will have the same effect.) The black block drops down to the fourth square, and there is a green block in the third square above it. This indicates that all of the frames in those squares have been "exposed." To add additional frames to this Movie you would have to begin with Frame 25.

**NOTE:** Even when you just "look" at a frame, you expose it. That doesn't mean you can't use it, what it does is add that blank frame to your Movie. Blank frames can be deleted by using the CUT command in the EDIT FILE. (See page 51.)





## THE PULL DOWN MENUS: #18 THE GOODIES MENU

The GOODIES MENU allows you to manipulate objects in a variety of amazing ways after you have created them. To get acquainted with the GOODIES MENU, let's clear the screen (using CLEAR MOVIE from the FILE MENU).

### ZOOM

1. Draw a triangle. When you first boot up FANTAVISION you'll find that the ZOOM function of the GOODIES MENU has a check next to it. This means that ZOOM is automatically selected when you start up. If by some chance you are not on ZOOM right now, select it with the cursor. To the right of the word GOODIES are two sets of arrows; one set pointing toward each other, the other set away from each other. Select the first set and see what happens to your triangle. It got smaller, didn't it? In fact, it got 12% smaller.

2. Press the arrows pointed toward each other until your triangle disappears. Then press the outward set of arrows and watch your triangle come back. If your triangle runs up against the edge of the screen, what happens? Objects will not be "clipped" if they are ZOOMed to their fullest. Instead they just squish against whatever edge of the screen they run into.

Let's create a "quick and dirty" animation using ZOOM.

1. Go ahead and shrink your triangle a little bit.
2. Now select CLONE from the EDIT MENU. You are now in Frame 2.
3. Now blow your triangle back up with the ZOOM command and select GO. Your triangle should be breathing at you. You'll probably never get to see a breathing triangle in geometry class.

### TURN

Clear your animation again (CLEAR from the FILE MENU) so we can play with TURN.

1. Using the MAKE RECTANGLE feature, make a rectangle on the left side of the screen somewhere.
2. Select TURN from the GOODIES MENU. Notice that the arrows to the right are now going counter-clockwise and clockwise.
3. Select either arrow repeatedly. Your square should be turning AND moving around the screen. That's because when you use TURN **without** using the CAPTURE BOX all objects turn around a point in the **center** of the screen.
4. Now go to the CAPTURE BOX, then surround your square. Try using either arrow now. What happens? When you capture an object and TURN it, it turns around a point **in the middle of the CAPTURE BOX**.



### LEAN

Clear whatever masterpiece you've created off the screen and start over.

1. Select the LEAN command.
2. Using the MAKE RECTANGLE command make a black rectangle the shape of a door.
3. Now change to Object #2, and put a colored rectangle exactly on top of the black one. You should now be able to see only the colored rectangle.
4. Using the CAPTURE BOX, select Object #1 from the Object Number indicator.
5. Press the left-hand LEAN arrow and see what happens. Your black door should be leaning out from behind the colored one.
6. Using the MOVE feature of the CAPTURE BOX (place the cursor inside the box and drag it), move the base of the black door over so that it's back where it started, matching the base of the colored door. Now what have you got? A shadow!

LEAN is very useful for creating shadow effects. You will soon learn that FANTAVISION allows you to automatically copy objects, so that no matter how complicated they are, you can lean them, make them a dark color, move them around and you have a shadow.

7. Press the cursor button outside the CAPTURE BOX and start playing with LEAN again. This time both of your doors should be moving around. **UNLESS THE CAPTURE BOX IS USED ALL OBJECTS IN THE FRAME WILL BE AFFECTED BY THE GOODIES COMMANDS.**

### FLIP

Selecting the FLIP command gives you both horizontal and vertical arrows to the right. You can FLIP the doors back and forth with the horizontal arrows or upside down with the vertical ones.

1. Place the CAPTURE BOX around both doors and FLIP again. Notice the difference? **WHEN YOU USE THE CAPTURE BOX OBJECTS FLIP WITHIN IT AND NOT THROUGHOUT THE FRAME.** Otherwise the center of the screen is the line over which objects will flip.

### SQUASH

CLEAR your previous Movie before starting on this section. The SQUASH command enables you to flatten objects so that they appear to be going off into the distance or coming toward you. You can make ellipses by SQUASHING and stretching circles. SQUASH is also useful for creating shadows in much the same fashion as LEAN, but with the "light source" above you rather than on one side.





1. Using the MAKE CIRCLE command make a black circle in the middle of the screen.
2. Use the SQUASH command to flatten the circle so that it appears to be nearly lying on its side.
3. Now go to the EDIT MENU and select CLONE. We should now be in Frame 2.
4. Using the CAPTURE BOX move your circle toward the top of the screen, then with ZOOM make it smaller. Now run the animation. See how you can create a 3-D perspective by SQUASHing objects and moving them "forward" and "backward"?

## #19 THE EDIT MENU

The EDIT MENU consists of the following functions:

UNDO

PASTE

CUT

CLONE

COPY

ZAP

UNDO and CLONE are the only functions which do not work differently on the Frame Level versus the Object Level. UNDO works exclusively on the commands indicated by the icons on the left hand side and the bottom of the screen. CLONE always means CLONE FRAME.

UNDO

1. UNDO and DRAW  
Using UNDO with the DRAW command will UNDO the last point plotted UNLESS that last point was used to close an object.
2. UNDO and GRAB POINT  
UNDO will return the previous point grabbed to its former position.
3. UNDO and INSERT POINT  
UNDO will delete the last point inserted.
4. UNDO and DELETE POINT  
UNDO will restore the last point deleted.
5. UNDO and MAKE CIRCLE  
The whole circle just disappears.
6. UNDO and MAKE SQUARE  
That square's a goner.



7. UNDO and TEXT  
UNDO will remove the last object typed. Since an object may be made up of as many as four letters, up to four letters may be removed by the UNDO command.
8. UNDO and CAPTURE  
UNDO will restore an object MOVED with the CAPTURE BOX to its former position. It will not UNDO GOODIES functions. To undo GOODIES functions just do them in reverse.
9. UNDO and the COLOR PALETTE  
UNDO will undo the last change of color. Colors changed with the GLOBAL command CANNOT be undone with UNDO. You have to change them back with GLOBAL.
10. UNDO and GO, GLOBAL, OVERLAY, OBJECT COUNTER, BACKGROUND COLOR, FRAME COUNTER  
UNDO doesn't affect any of the above.
11. UNDO and ANIMATION mode, DIMENSION  
UNDO will change back to your last change of ANIMATION mode or DIMENSION, though it's just as easy to change it back manually.

CUT

COPY

PASTE

CLEAR whatever Movie you have on the screen before you start this section.

CUT is one of three functions that interact with the Clipboard, a special "off-screen" area in the computer's memory that holds a section of your drawing that you have captured and cut or copied for future use. It holds one captured image at a time. The other two are COPY and PASTE.

When you CUT a frame, the whole frame goes to the Clipboard and replaces anything else that might have been on the Clipboard.

Likewise the frame which has been CUT disappears from your Movie. To get that frame back you must PASTE it in front of the frame you want it to precede.

COPY differs from CUT in that it copies a frame to the Clipboard without cutting it out of the current Movie.

PASTE enables you to make a copy of the frame you have CUT or COPIED by selecting PASTE while on the frame you wish to precede.

You may also use CUT, COPY and PASTE on the Object Level by using the CAPTURE BOX. In this case only the objects selected by the CAPTURE BOX are affected.

In addition, when you PASTE objects into a frame they will simply be added to the objects already in that frame, rather than creating an entire new frame. If, however, the number of objects in the current frame plus the number of objects on the Clipboard is more than eight, the extra objects will simply fail to PASTE. Lower Object Numbers have precedence. You may PASTE a single object in a frame multiple times by re-selecting PASTE.





Select the demo called REDWHITEBLUE from the front of your FANTAVISION disk. Select GO to run the animation and you'll see that the film is three frames long, and each frame contains a word describing its color. Frame 1 is WHITE, Frame 2 is RED, and Frame 3 is BLUE. We want to change the order to RED, WHITE and BLUE. Stop the animation, and be certain you are on Frame 1.

1. Take the frame we are on, which is WHITE, and CUT it out. It will go to the Clipboard, and the square in Frame 1 will now be RED.

2. Click to Frame 2, and you'll see that the frame says BLUE. We need to stick the WHITE square on Frame 2 so that the BLUE square can move to Frame 3. To do this we simply move to Frame 2, and PASTE. Now click through the frames again, starting with Frame 1, and you'll see that the sequence is now RED, WHITE and BLUE.

That shows you how CUT and PASTE work on a Frame level. Remember that COPY works like CUT except that it does not delete the Frame at the same time it puts it on the Clipboard. Now, let's try it on the Object Level.

With this next exercise we want each successive frame to include its own color word, plus the color words in the frames leading up to it. In other words, they will say RED in Frame 1, RED and a WHITE in Frame 2, and RED, WHITE and BLUE in Frame 3.

1. To do this go to Frame 1. Capture RED with the CAPTURE BOX and select COPY. Absolutely nothing appears to happen.

2. Now, click to Frame 2 and select PASTE. You should see the RED from Frame 1 plop down next to the WHITE in Frame 2.

3. Now, surround both words with the CAPTURE BOX. Select COPY again. Click to Frame 3 and select PASTE. Now, you should have RED, WHITE, and BLUE all lined up in a row.

You can use CUT, COPY and PASTE to rearrange the Object Numbers of the objects in a frame, but it's deucedly difficult. What you do is COPY the objects one by one into a blank frame in the order you'd like them, then PASTE that frame in and cut out the old frame.

**NOTE:** If you press **Esc** or **Return** when the animation is running, or when you are stepping through the animation using the **Space Bar**, you can COPY the image to the Clipboard, so that it can be inserted with PASTE as a new frame.

### CLONE

CLONE is actually short for CLONE FRAME. Selecting CLONE automatically copies the current frame to the end of the Movie. CLONE does not affect the contents of the Clipboard.

CLONE is very handy when you have a very complicated frame that you don't want to have to draw over again. You can just CLONE it to the next frame (presuming that's the current end of the Movie) and edit it from there.



Sometimes you will "expose" a frame without realizing it, so that when you CLONE there are blank frames between the bulk of the Movie and the cloned frame. Just delete the blank exposed frames with CUT.

CLONE is a bit deceiving because it appears as if nothing happens when you use it. If you look at the Frame Counter however, you'll see that you've jumped to the end of the Movie.

When you use CLONE with the CAPTURE BOX it works exactly the same way as without it, except that the CAPTURE BOX stays highlighted even in the newly cloned frame. This is convenient for when you are using the GOODIES MENU in incremental fashion. For example, slowly rotating a square. You can just select CLONE then the GOODIES option without having to re-capture the object in every frame.

Remember that even though you may CLONE with an object selected with the CAPTURE BOX, CLONE is still copying the entire frame. You cannot CLONE a selected object from one frame to another (use COPY and PASTE instead).

Let's try the spinning square trick to show how easily you can get some exciting effects. CLEAR the previous Demo.

1. Draw a squarish rectangle anywhere on the screen.

2. Put the CAPTURE BOX around it, and then select CLONE. You should be in Frame 2.

3. Go to the GOODIES MENU and select TURN. Click the counterclockwise arrow 4 times.

4. Now select CLONE again. Click the counterclockwise arrow another 4 times.

5. Select Clone once again. Click the counterclockwise arrow yet another 4 times.

6. Run your Movie. You should have a little spinning square.

If you like this sort of thing, let's play with the square some more. Otherwise you can go on to ZAP (it sounds neat but it's not nearly so much fun as CLONE).

1. Stop the animation, and go to the GOODIES MENU and select SQUASH.

2. Go through each frame and click the SQUASH DOWN arrow about five times. Select GO and run the Movie again.

3. Stop the animation, and move Frames 2 and 4 to different parts of the screen and run the animation again.

4. Try making the object bigger when it's toward the bottom of the screen and smaller when it's at the top (use ZOOM).

### ZAP

Using ZAP enables you to delete a frame or an object without affecting what's on the Clipboard. To ZAP just a single object, you must first surround it with the CAPTURE BOX.

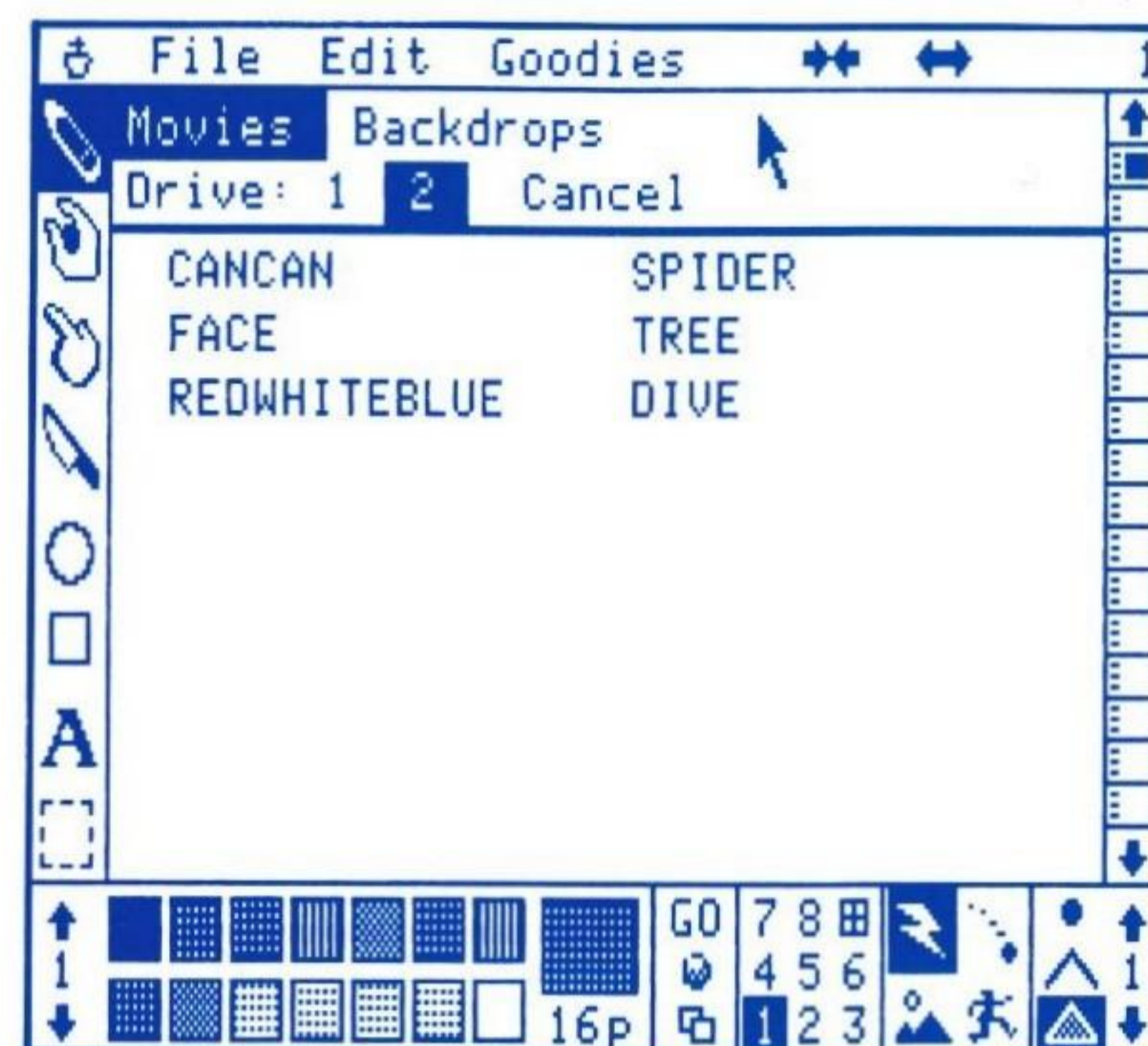




## #20 THE FILE MENU

### LOAD MOVIE

1. Select the LOAD MOVIE command and you will get a screen that looks like this:



2. Turn over the FANTAVISION disk to the back side, or insert a data disk in Drive 1, then click over the word Movies again to get a catalog.

3. To get Movie files from Drive 2 simply click over "2" and a catalog will appear.

4. To see additional Movie files on the catalog which do not appear on the first screen, press the DOWN arrows. To get back to the top of the catalog list again, click over "Movies."

5. To select a Movie file, highlight the file name with the cursor and press the release button.

Loading a Movie will wipe out the current Movie.

### SAVE MOVIE

1. When you want to save a Movie you've created, select this option and the program will ask you for the Movie name. If you need to save to a different drive in response to the prompt, type the name of your Movie, followed by a comma and the number 2. For example: DIVE,2.

2. You need to have a FANTAVISION or ProDOS "formatted" data disk on which to save your Movie. If you haven't yet formatted a data disk using FANTAVISION, look at the instructions under FORMAT DISK in this menu (page 55).



You may print out individual screens that you create by saving the screen as a Backdrop and then using a screen dump program, such as Printographer by Roger Wagner Publishing, Inc. FANTAVISION is not itself, however, a printing program.

To get out of the SAVE MOVIE function without saving your Movie, press **Esc**.

### CLEAR MOVIE

When you select the CLEAR MOVIE command you will be asked again if you want to clear just to make sure. Using the CLEAR MOVIE command clears both the present Movie and the present Backdrop.

### LOAD BACKDROP

This function works with the files on the Backdrop catalog in the same manner in which the LOAD MOVIE function works with the files in the Movie catalog. (See LOAD MOVIE above.) You can also use hi-res screens from other programs when creating your Movies. They must, however, be single hi-res screens in a ProDOS format. Just call up the screen you want from a data disk, and save it to the Backdrop catalog (See SAVE BACKDROP below).

### SAVE BACKDROP

When you want to Save a Backdrop you've created select this option and the program will ask you to name the Screen. You need to have a FANTAVISION or ProDOS "formatted" data disk to save your Backdrop onto. If you haven't yet formatted a data disk using FANTAVISION, look at the instructions under FORMAT DISK below.

To save your Backdrop to a second disk drive, in response to the prompt, type the name of your Backdrop, followed by a comma and the number 2. For example: TREE,2.

To get out of the SAVE BACKDROP function without saving your Backdrop, press **Esc**.

### CLEAR BACKDROP

This function will clear the Backdrop from the present screen without clearing the Movie if one is also present.

### FORMAT DISK

You may format or "initialize" a blank disk on which to save your Movies by selecting this function and following the easy step-by-step instructions. Formatting clears the present Backdrop.

### QUIT

When you want to leave FANTAVISION, select QUIT and you can boot up another program simply by pressing **Y** for Yes.





This brings to a close our walk through the magical world of FANTAVISION. It's a world all of us are just beginning to explore. We look forward with excitement to the dreams that FANTAVISIONaries like yourself will create.

Should you have some initial difficulties making the transition from reality to fantasy, consult the Trouble-Shooting section which follows. If you find yourself already making the leap and wanting more knowledge for your journey, the APPENDICES cover some interesting techniques.

May the FANTASY be with you!



## MOVIE MATINEE

This is a demo of a Show put together from the Movies on the back side of the FANTAVISION disk. Remove the FANTAVISION disk, turn the disk over to the back side, replace the disk in the drive and then reboot the program by either turning your computer OFF and then ON, (or by using **Control, Open Apple, Reset** if you have an Apple IIe or IIc) then just sit back, relax and enjoy.

The Show loops continuously. To pause the Movie, press the **Space Bar**. You may reverse the action by pressing the left arrow to make it go backward and the right arrow to make it go forward. You may speed up or slow down the action by pressing the number keys. **4** is medium speed, **3** to **1** makes the action go faster, **5** to **7** makes it go slower. To stop the Movie press **Esc**. To get to the next Movie, press **Return**.

## CREATE A SHOW

One of the nicest things about FANTAVISION is that you will be able to save the Movies you create onto a Show Disk and share them with relatives and friends. Because FANTAVISION lets you format the Show Disk so that it will self-boot, the recipients of your epic efforts don't need to have FANTAVISION itself to run the show, just an Apple computer with at least 64K.

To put together your own Show, you must first format a disk to prepare it to self-boot and to accept the Movies you want to save on it. To do this, boot up the front side of the FANTAVISION disk. Before the Main Screen comes up you'll see a prompt that tells you to "Press Space Bar to Change Drawing Tool or Make Show Disk." Press the **Space Bar** and then follow the easy prompts.

After you have formatted your Show Disk:

1. Put the FANTAVISION disk back in Drive 1, and press **Q** to Quit. You will be returned to FANTAVISION. To assemble your own Show Disk you will copy and save the Backdrops and Movies to your formatted Show Disk in the order in which you want them to appear. These instructions are for a single drive system. If you have 2 drives you can save yourself some disk swapping by choosing Drive 2 on the Load Movie screen (see FILE MENU).

2. To create your Show Disk you must select some Movies and Backdrops. You may choose Movies and Backdrops from the back side of your FANTAVISION disk, Movies that you have created and saved to a formatted Data Disk, or you may select single hi-res screens from any ProDOS disk. We will call this disk the Source Disk. Insert the disk now.





3. Pull down the FILE MENU and select Load Backdrop. Any single hi-res pictures on the disk will be automatically displayed.

4. Choose the Backdrop you want to begin your Show Disk with. Note that the Movies you will subsequently save on your Show Disk will animate on top of this Backdrop, until a new Backdrop is encountered.

5. Insert your formatted Show Disk (We will call this the Target Disk). Pull down the FILE MENU and select Save Backdrop. Give this Backdrop a name, and save it to your Target Disk.

6. Add whatever Movies you want to run on this Backdrop by loading them from the Source Disk and then saving them to the Target Disk. The Movies will run in the order that you save them.

7. If you want another Backdrop in your Movie Matinee, repeat steps 2-5 above. The new Backdrop will wipe out the prior Backdrop, and any subsequent Movies you save to the Target Disk will animate over it. Remember that these Backdrops and Movies will play in the order you save them.

8. To run your Show, boot the Target Disk.

To save a Movie or a Backdrop to a disk in a second disk drive, select SAVE MOVIE or SAVE BACKDROP from the FILE MENU, and in response to the prompt, type the name of your Movie or Backdrop followed by a comma and the number 2. For example: SAVE BACKDROP: TREE,2.

After this, each time you save a Movie or a Backdrop it will be saved to Drive #2. If you want to save to Drive #1 again, simply follow the name of your Movie or Backdrop with a comma and the number 1. The save drive system is separate and distinct from the load drive system. Thus, you may load Movies or Backdrops from Drive #1 and save them to Drive #2 automatically. This will be especially helpful when creating a Show disk.

### DELETING BACKDROPS

When you load a Backdrop and then a Movie, the Backdrop will stay until it is replaced by another Backdrop, or until it cycles back through the entire disk. Should you wish to run a movie over no Backdrop, you must save the background color you need as a Backdrop file so that the previous Backdrop will be erased. Then load your Movie. Alternatively, you can put those Movies which require Backdrops at the end of your Show disk.

### LOOPING

The Looping function is something you use only when you make a Show Disk with FANTAVISION. Begin by selecting the French Window in the OBJECT COUNTER BOX. The two boxes to the right disappear and are replaced by the word LOOP.

Here's how it works. When you Save a Movie, the number to the right of the word LOOP is saved within the file. It tells the computer how many times you want that particular Movie to play until it goes on to the next one. LOOP is normally set at 1. The greatest number of LOOPS available is 9. If you want your Movie to run endlessly just load the Movie and press GO.



## ADVANCED FANTAVISION 101

### USING FONTS FROM THE DEMO DISK

You may have noticed several files on the front side of the FANTAVISION disk called "Something" font. These files contain fonts which you can use in FANTAVISION movies. The complexity of the font characters varies, but in all cases the letters are more complex than the font which you get when you use TEXT mode in FANTAVISION.

The complexity of these fonts causes trade-offs in terms of their flexibility. When a single character uses as many as 3 or 4 Object Numbers, you will not be able to animate very much text at one time. You may wish to use a more complex character as the first letter in a word made with regular TEXT mode, or you might put all your complex characters into the background and animate on top of them.

In either case, transferring characters from the FONT files to your movie can be tricky if you intend to do a lot of it. The basic maneuver involves COPYing the characters you wish to use onto the Clipboard, then changing to the Movie you are creating in order to PASTE them in. The main difficulty is that the characters are made up of several objects, and only eight objects will fit in a frame or on the Clipboard at one time.

Let's try a simple example first. Load in one of the Movies which ends with the word FONT. Run the Movie. Notice that the Movie simply cycles through the letters, one per frame. If you wanted to spell your name, using this font for only the first letter, and TEXT mode for the remainder, you would need to get to the frame in the Font Movie with the proper letter. Click through the frames until you come to the letter you want.

COPY this letter to the Clipboard. The best way to do this is to CAPTURE it, then COPY it. Notice when you CAPTURE the letter how many Object Numbers it uses up. It may only be one, but several of the fonts provided require more. Now CLEAR the Font Movie. PASTE your letter into the frame, then use TEXT mode to complete your name. Unless you have a very long name you should be able to fit all of it into one frame without using up all the Object Numbers. Now you can CLONE your name from frame to frame, SQUASH it if you want, TURN it, ZOOM it, etc.

This gets considerably more complex as you use more letters. Let's try spelling the word "MOM" with one of the fonts. This time assemble the entire word in an empty frame at the end of the Font Movie, then COPY and PASTE that frame into our new Movie.

The way we do this is to CAPTURE each letter in the Font Movie, then go to a blank frame at the end of the Font Movie and paste in the letter. Once the word "MOM" is assembled in a frame at the end of the Font Movie, COPY the entire frame. Then CLEAR the Font Movie, PASTE the word "MOM" into our new Movie and you're ready to go. As a kick you may want to flip "MOM" upside down in Frame 2 so that you get "WOW MOM" when you run your Movie.





Now let's get REALLY complicated. If you wanted to put the word "Broderbund" into a new Movie using one of the font files, you would be faced with the problem that each character in one of the font files uses at least one Object Number. The word "BRODERBUND" is ten characters long (add another if you want to slash the O). We only have eight Object Numbers in any given frame. This means that the word "BRODERBUND" will have to be spelled over several frames.

If we put "BRODER" in one frame and "BUND" in the next, we will get a messy Movie that changes from the first two syllables into the last one and doesn't clearly spell anything.

You will want to put some portion, if not all, of the word into the background, using Background mode.

You still can't put all the characters into one frame, which means the only way to see all of our word at once is to use the OVERLAY command. Remember too, that using Background mode means that the Object Numbers in Background mode need to be left blank in both adjacent frames.

Follow the same procedure you used for transferring the word "MOM" above in order to get the first several characters into your Movie. Leave Frame 2 blank in your new Movie. Go back (after saving your new Movie under some name), and assemble the next several characters, PASTE them into Frame 3 in your new Movie, go back and assemble some more characters and PASTE them in Frame 5. You can start your animation in Frame 7.

You may have a couple of problems by now. You've lost characters here and there; the characters are too big to fit straight across the page; the middles of your "B's" are missing, etc. All of these can be overcome with practice. This feature is in here to give you a skill you can grow into. We don't want you to get tired of FANTAVISION too quickly.

## OTHER USES FOR THE FRENCH WINDOW

### BACKGROUND COLOR

This function of the French Window is explained under OBJECT COUNTER, in BARE BONES and STEP-BY-STEP.

### LOOPING

Looping is a function covered under CREATE A SHOW (page 57).

### THE CLIPPING WINDOW

"Clipping" is a term used in computer graphics. It means that a portion of an object may be visible on the screen even though other parts of the object have already left the "stage." In other words, if objects were not clipped, they would simply disappear in a flash as they got to the border of the animation window.



FANTAVISION uses a clipping window even in its Regular mode. To see how this works just try drawing a Dot, size 9, at the very bottom of the screen. You'll see that only the top half of the Dot is visible; the remainder is clipped. If the Dot weren't clipped either it would be visible right on top of the items around the screen, which would be a real mess, or you simply wouldn't be able to draw a large Dot close enough to the edge of the screen so that anything less than the entire Dot was visible.

Sometimes you may want the "window" to be a size other than the entire FANTAVISION screen. When using the entire FANTAVISION screen you can't really make an object exit the screen gracefully, because you are not able to draw any part of the object outside of the screen. You can make objects seem to disappear by disguising them as Lines, Dots, etc. and having them sneak around until you want them to re-appear as objects again, but that's difficult and limiting.

FANTAVISION let's you make a Clipping Window which is smaller than the entire screen. This enables us to do nifty things, like watching the stars shoot by out of our spaceship window. This is how you do it.

1. Select the French Window in the OBJECT COUNTER.
2. Select the CAPTURE BOX. You will actually be handling the Clipping Window after this step, not the CAPTURE BOX.
3. The Clipping Window will behave exactly like the CAPTURE BOX does, except it will not shrink to surround any objects that may be inside of it. You can move the Clipping Window by putting the cursor inside of it. You can start a new one by putting the cursor outside of it, etc.
4. Any Backdrop you have loaded is not affected by the Clipping Window.

**NOTE:** When you use the Clipping Window it should be the last thing you do, after you have completed all of your other animation.

## USING LIGHTNING MODE TO SPEED UP OBJECTS

In order to understand Lightning mode, it helps to know how animation works. To make something look like it is in motion, the computer must draw it in one position, then erase it and redraw it in a slightly different position. When it erases, the screen is momentarily blank, and this causes an annoying flicker. In order to avoid flicker, the computer has two screens that it uses for drawing. Only one is shown at a time, and all erasing is done on the hidden screen. By making small changes in an object's position and flipping the screens, smooth animation is possible. With Lightning mode on, erasing is simply skipped, so the two screens show slightly different images. This causes a flickering effect that can be used to simulate explosions or earthquakes.





Like all good rules, this one deserves an exception. Any normally animated object still erases as it moves. Where it overlaps a Lightning object, it erases it also. If a normal object completely overlaps a Lightning object, it erases it completely. Thus, a normal object can "wipe out" the flashing trails left by a Lightning object. So, if you have any objects that are always overlapping, only the biggest object needs to erase. When it does, it will automatically erase all overlapping objects. In FANTAVISION, it takes just as long to erase an object as it takes to draw it. Thus, half of the animation time is spent erasing. By setting as many objects to Lightning as possible, your Movies can be substantially speeded up.

Lightning can also be used for immobile objects. For instance, if Object #4 is a pole, Object #3 will pass behind it and Object #5 will pass in front of it. As long as the pole does not move, it does not need to be erased. Thus you can speed up the animation by putting the pole in Lightning mode. Of course, if you don't need objects to pass behind the pole, you don't even need to draw it every time. In this case you would just drop the pole to the background and forget it.



## TROUBLE-SHOOTING

FANTAVISION is a very powerful program, and many pains have been taken to make sure you don't accidentally use that power to mess up a Movie you've been working on. Sometimes the program won't let you do things you want to do because there's something else you need to do first. This section is intended to help you figure out what the problem is, so you don't have to make a telephone call to our peaceful neck of the woods to ask us.

### CURSOR

**SYMPTOM:** The cursor doesn't reach some part of the screen.

**CAUSES:** If you have more than one input device hooked up at a time (graphics tablet and joystick, for example) you may be confusing the software.

If your input device is not properly calibrated to cover the entire screen you'll have trouble. Try using the trim tabs (if there are any) to adjust your input device.

If you select the wrong input device when the program boots up, the program will not perform properly.

### DRAW

**SYMPTOM:** Beeping sound when trying to enter a brand new object in an apparently empty frame.

**CAUSE:** A single point, not easily visible, may already have been plotted accidentally. Two presses of the button will re-open it, or it can be deleted with DELETE POINT.

**SYMPTOM:** A line appears connected to a point off the screen.

**CAUSE:** Points are often plotted accidentally when we intend to select an icon or change frames. Because of the way some input devices work they may return values to the software which place points off the screen and seemingly out of reach. It's a good bet, however, that if you use the DELETE POINT command with the same input device, you can get it to give you that same value so you can get rid of the point.

### GRAB POINT

**SYMPTOM:** Can't GRAB many of the points on the screen.

**CAUSE:** When you have activated the OVERLAY command you can only GRAB POINTS in the current frame. The points you can't GRAB are probably in other frames. Turn off the OVERLAY command and you'll see which points are available to GRAB. Also, you cannot GRAB POINTS in a Backdrop.





### INSERT POINT

SYMPTOM: Can't insert a point.

CAUSE: You may not be close enough to the middle between two adjacent points. The two points between which you're trying to insert the point might not be adjacent (change to Line mode to see if they're connected). There may already be 32 points in the object.

### DELETE POINT

SYMPTOM: Can't delete a point.

CAUSE: The point you want to delete may not be in the current frame. Make sure the OVERLAY command is turned off.

### MAKE CIRCLE

SYMPTOM: Can't make a circle.

CAUSE: You can only make a circle in a blank Object Number, even though the circle takes up only 16 of the 32 available points. You can add individual points in the same Object Number after you've made the circle.

### MAKE RECTANGLE

SYMPTOM: Can't make a rectangle.

CAUSE: You can only make a rectangle in a blank Object Number, even though the rectangle takes up only 4 of the 32 available points. You can add individual points in the same Object Number after you've made the rectangle.

### TEXT

SYMPTOM: Some horizontal lines are invisible.

CAUSE: They are the same color as the background. Change object color or Background color.

SYMPTOM: Funny lines appear connecting the letters together in a strange way.

CAUSE: If you have gone back and changed the DIMENSION mode, which is automatically set to Line 7 for TEXT, you can create quite a mess. Change it to Line 7 and things should straighten out. If it already is in Line 7, change to the next frame and back again and the extra lines should disappear.

SYMPTOM: Pieces of text are left lying around the screen when one word is changed into another.

CAUSE: This problem cannot always be avoided. It would slow FANTAVISION down too much to constantly check that this didn't happen. The problem is most likely to occur when you "transform" a word into another word with a different number of letters. If you try re-phrasing your line or repositioning your words you may be able to clean it up. You may also "wipe" the problem clean using solid patches which match the Background.



### CAPTURE BOX

SYMPTOM: Can't capture an object.

CAUSE: The object may be in the Backdrop (you cannot CAPTURE Backdrops), or is not in the current frame. Turn off OVERLAY and CLEAR BACKGROUND if you want to make sure.

SYMPTOM: Many functions work differently when the CAPTURE BOX is selected.

CAUSE: The CAPTURE BOX. Change to DRAW and things should clear up.

### COLOR PALETTE

SYMPTOM: Can't change the color of an object on the screen.

CAUSE: The object may not be selected in the OBJECT COUNTER. Whenever you switch from creating an object to using the CAPTURE BOX, all objects are de-selected from the OBJECT COUNTER. Select the proper Object Number and you shouldn't have any problem changing colors.

SYMPTOM: Ugly jagged lines between colors.

CAUSE: Mixing colors from different palettes. Even the black in PALETTE #1 is different from the black in PALETTE #4.

### OBJECT STATUS BOX

SYMPTOM: Status doesn't change even when Object Numbers are changed.

CAUSE: If you have selected multiple objects with the CAPTURE BOX, the OBJECT STATUS BOX will only give you information about the lowest numbered object, regardless of what other objects you select or remove from the CAPTURE BOX.

### GO

SYMPTOM: Movie won't run.

CAUSE: You only have 1 frame in the Movie.

SYMPTOM: Movie runs backward or runs forward then backward.

CAUSE: Hit the right arrow to make the Movie run forward. If the Movie is also muddling from the last frame to the first, put a blank frame at the end.

SYMPTOM: The Movie appears to flash in places.

CAUSE: You may have blank frames stuck in between your action frames. Get rid of them using CUT.

SYMPTOM: The Movie is too jerky.

CAUSE: It's running too fast. Slow it down by selecting a speed closer to 7.





## GLOBAL

**SYMPTOM:** You selected GLOBAL, but it didn't change the color, animation or dimension of your object throughout the entire Movie.

**CAUSE:** It will only change your object in a new frame when conditions match the object in the original frame. If you're changing a blue object to yellow, it will NOT change that object to yellow in any frames where the object is not blue.

## OVERLAY

**SYMPTOM:** When the OVERLAY is turned off, there's still stuff left on the screen which isn't in the current frame.

**CAUSE:** Any object dropped to the background or any background screen loaded in will still be there even if OVERLAY is turned off. Use the CLEAR BACKDROP command to eliminate any background objects or screens that you don't want visible in the current frame.

## OBJECT COUNTER

**SYMPTOM:** Cannot select any of the Object Numbers.

**CAUSE:** If the CAPTURE BOX is highlighted, it will only let you select Object Numbers which are already being used in the current frame. If there are no objects in the current frame (not counting background objects which are visible, but not editable in the current frame) then you will be unable to select any Object Numbers until you move out of the CAPTURE BOX mode.

**SYMPTOM:** Can't add to an Object Number even though there are fewer than 32 points plotted.

**CAUSE:** You may be using MAKE CIRCLE or MAKE RECTANGLE mode, both of which require a completely empty Object Number for use.

## THE ANIMATION BOX

**SYMPTOM:** Objects don't seem to be in the same mode they were when you created them.

**CAUSE:** You may have left the GLOBAL command on, so that changes you thought were only being made to one frame were actually being made to all frames.

**SYMPTOM:** The Background turns into a real mess at the beginning or end of the animation.

**CAUSE:** The Object Numbers you use to create the Background must be left blank in both adjacent frames. Add a blank frame to the end of your Movie and see if that helps.

**SYMPTOM:** When using Trace or Lightning mode the object just makes a smear that is completely black (or white).

**CAUSE:** The animation is running too slowly. Speed it up by pressing 3, 4 or 5.



**SYMPTOM:** When using Trace or Lightning mode things jump all over the screen.

**CAUSE:** The animation is running too quickly. Slow it down by pressing 5, 6 or 7.

## THE DIMENSION BOX

**SYMPTOM:** When using Solid mode 3 or 4, which should leave the last segment of the solid without an outline, there still seems to be an outline.

**CAUSE:** Many of the colors in FANTAVISION are created by alternating horizontal lines of black or white with some other color. It may appear when using one of these "dithered" colors that the outside border of the object is black or white, when you want it to be open. In fact, there is no border on the object, it simply painted the black or white horizontal line last. When you add another object onto the open segment that black or white line will not interfere.

**SYMPTOM:** While using Line mode with a defined number of segments between blanks, you get the wrong number of segments once you actually start to draw.

**CAUSE:** First try flipping out of the current frame and back again to see if the final result will actually have the wrong number of segments. If it does, look at the number of points in your object (in the OBJECT STATUS BOX) and see if you actually plotted the right number of points. The most common cause of having the wrong number of points is that you tried to close off your object by going back to the beginning point, and plotted another point. That works only in Closed Line mode. In counting points, remember that it takes the Line mode number plus one point to define each segment. In other words, in Line mode 2, it takes 3 points to define 2 segments, and so on.

## THE FILM STRIP

**SYMPTOM:** Blank frames all over the place.

**CAUSE:** Anytime you look at a frame you expose it. This adds blank frames to your Movie. CUT out the unwanted frames.

## THE GOODIES MENU

**SYMPTOM:** GOODIES function stops working.

**CAUSE:** Each GOODIES command can be used eight times in a row before the software says to itself, "I need a new picture of this object, 'cuz I've ZOOMED it or LEANED it or SQUASHED it about as far as I can. My algorithms are tired." Change practically anything, such as the icon selected on the left side, then come back to GOODIES and you'll be able to ZOOM or TURN or SQUASH another eight times.





### THE EDIT MENU

**SYMPTOM:** CLONE makes a copy of the frame but sticks it way out in the boonies beyond your last frame.

**CAUSE:** You must have accidentally exposed those frames between where you wanted the CLONED frame to be and where it actually ended up. Just CUT them.

**SYMPTOM:** Sometimes when using PASTE the object is assigned a different Object Number than the one it had in the frame it was copied from.

**CAUSE:** The program automatically assigns to the object to be PASTED the first available Object Number in the new frame. To do otherwise would involve asking what Object Numbers you want to assign to what objects every single time you used PASTE, which would be very cumbersome. In order to have the desired Object Number assigned, you may occasionally have to create dummy objects in all the Object Numbers lower than the one you want, then PASTE, then delete the dummy objects.

### THE FILE MENU

**SYMPTOM:** Load Backdrop doesn't work.

**CAUSE:** Load Backdrop is looking for a single hi-res picture using ProDOS. DAZZLE DRAW pictures will not load because they are double hi-res. DOS 3.3 files need to be converted to ProDOS using the CONVERT program which comes with ProDOS.

### THE CROWN MENU

**SYMPTOM:** Scott Anderson won't answer your phone calls.

**CAUSE:** Scott is happily married. Questions regarding FANTAVISION may be directed to Brøderbund Software by letter or phone.

### ALL OTHER PROBLEMS

Experiment like crazy. Use the manual. Sleep on it. Ask your mother. Write your Congressperson. If none of this works, write or call our Customer Service Dept.

ALWAYS KEEP YOUR ORIGINAL FANTAVISION DISK HANDY (NOT JUST THE BACKUP) WHEN CALLING CUSTOMER SERVICE.



#### BACKDROP

The single hi-res screens which you can load in behind your FANTAVISION animation. These must be created with a single hi-res paint system such as Graphics Magician or MousePaint, and, if need be, converted to ProDOS format using ProDOS (available from Apple). Accessed through the FILE MENU.

#### BACKGROUND COLOR

The color that fills in the entire screen behind your animation and your Background Objects. Background Color is accessed through the French Window in the OBJECT COUNTER. The Background Color will paint over any Backdrop which has been loaded in.

#### BACKGROUND OBJECT

Any object which has been dropped to the background using Background mode. Background Objects rest in front of the Background Color.

#### CLIPBOARD

The place where a picture of the screen is put whenever you use the COPY or CUT command. Also the place from which a picture of the screen is retrieved whenever you use PASTE.

#### CLIPPING WINDOW

The area of the screen within which animation will be visible. Clipping allows portions of an object to be visible within the window, rather than forcing the entire object to be either visible or not.

#### FRAME

There are three kinds of frames in FANTAVISION. The first is the frame in which you create one still picture, which is analogous to a frame in a Movie film. The second kind are the "in-between" frames which are images created by the computer between the frames you draw when the movie is run. The last are the frames of the FILMSTRIP on the right hand side of FANTAVISION. Each of these represents eight of the frames in which you create one still picture.

#### FRENCH WINDOW

The icon at the top right of the OBJECT COUNTER. Selecting the French Window gives us access to the Background Color, the Clipping Window and Looping.

#### GLOBAL

The ability to change all occurrences of something by changing only one, while the GLOBAL command is on. GLOBAL is used in FANTAVISION to change color, animation type and dimension. GLOBAL is similar to "search and replace," a basic feature of word processors.

#### IMAGE

Everything you see on the screen at one time.



**OBJECT**

A "thing" you make on the screen which the computer recognizes as separate from the background or from the next "thing." Objects can be turned and flipped, etc. on the computer just as they can in real life.

**OVERLAY**

The ability to combine a number of frames into a single image.

**PIXEL**

The smallest unit of light which can be turned on by your computer. Comparable to the dots of a newspaper picture. Pixel size is determined by the hardware.

**RUBBER BANDING**

Also called "ghosting," this technique allows you to move around a transparent version of the object being rubber banded until you have it placed properly, at which time the object is made solid.

**TRANSFORMATION**

The changing of an object from one thing into another, such as changing a frog into a car.

**TWEENING**

The automatic computation of in between frames based on the key frames drawn by the user.

**ZOUNDS**

About the nicest thing you can think of to say after you accidentally mess up your entire movie by forgetting to turn GLOBAL off before making some changes.

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PLEASE OPEN FOR  
FANTAVISION AT-A-GLANCE



# KEYBOARD COMMANDS

## FILE

**L** = Load Movie      **D** = Save Backdrop  
**S** = Save Movie      **W** = Clear Backdrop  
**Ctrl X** = Clear Movie      **F** = Format Disk  
**B** = Load Backdrop      **Q** = Quit

## EDIT

**Z** = Undo      **V** = Paste  
**X** = Cut      **K** = Clone  
**C** = Copy      **^** = Zap

## GOODIES

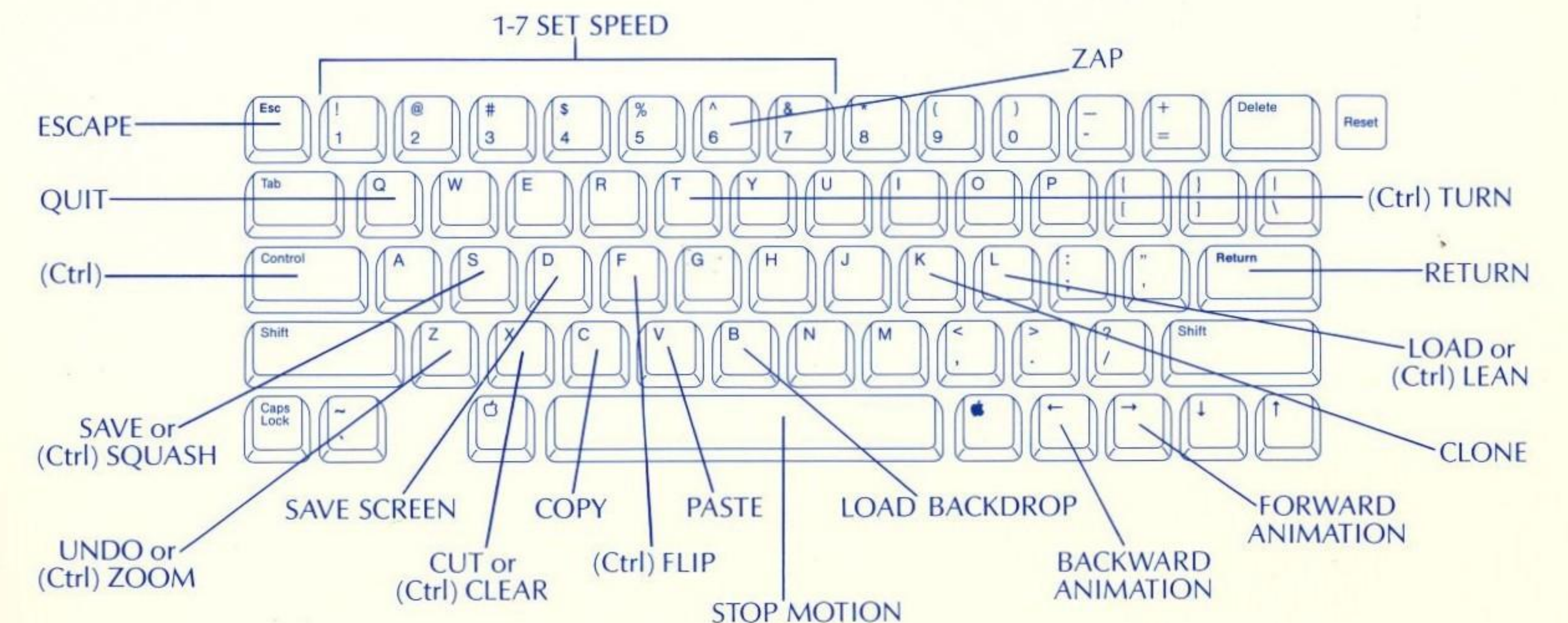
**Ctrl Z** = Zoom      **Ctrl F** = Flip  
**Ctrl T** = Turn      **Ctrl S** = Squash  
**Ctrl L** = Lean

## WHILE RUNNING

**1-7** Set Speed (Slow to fast)  
**Space Bar** Stop Motion  
**Esc** Escape: If you press **Esc** when the animation is running, or when you are stepping through the animation using the **Space Bar**, you can **COPY** the current frame to the Clipboard, so that it can be inserted with **PASTE** as a new frame. Returns to current work frame.  
**Return** Same as **Esc**. Returns you to last viewed frame.  
**←** Backward Animation  
**→** Forward Animation



# KEYBOARD





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# FANTAVISION™

Q U I C K - S T A R T C A R D



  
Broderbund®



You don't have to read the manual to start having fun with FANTAVISION. Because it is as much a toy as it is a tool, you can have a great time discovering some of what FANTAVISION does by just diving right in. After you've fooled around on the screen for awhile, you can sit back and thumb through the pages of the manual to find out what you've been doing. This card gets you started by giving step-by-step instructions for a simple animation sequence you can create right now.

## GETTING STARTED

First, check to see that your input device (mouse, Apple Graphics Tablet, KoalaPad, or joystick) is connected to your computer. Then boot the FANTAVISION disk, label side up.

## THE FANTAVISION SCREEN

The FANTAVISION Screen is where you'll draw images and put them in motion. Around the margins of the screen are the tools and materials you'll use. There are plenty, but don't worry about them all at this point. For now, let's keep things simple. Just follow the steps below to create your first FANTAVISION feature.

## STEP-BY-STEP



1. Move the cursor to the DRAW icon in the top left margin. Click, press or push (depending on your input device) over the icon, then move the cursor back onto the screen. At one side of the screen, draw a geometric shape (triangle, rectangle or whatever) by plotting a number of points—again, by clicking, pressing or pushing your input device. Position the end of the last line so that it touches the starting point of the first line, thus “closing up” the shape. The closed shape will fill up with the color black.

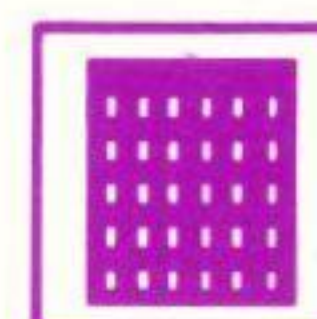


2. Click the HAND icon (just below the DRAW icon). Use the HAND to grab a corner of your shape and pull it into a new shape. Change the color of your shape by clicking on one of the color boxes at the bottom of the screen.

3. Now, just for fun, pull down the GOODIES MENU and experiment. Select ZOOM and click the arrows to the right of the menu to see your shape get smaller or larger. Select TURN and click the arrows to see your shape turn. Select LEAN, FLIP, and SQUASH and see what happens.



4. When you're done fooling around, click the arrow at the bottom of THE FILM STRIP in the right margin. Your shape will disappear (temporarily) because you've just completed one frame of your film and stored it.



5. Work on the next frame in the same way choosing a different color for your shape and drawing it on the opposite side of the screen. Click the arrow at the bottom of THE FILM STRIP to store the second frame of the film.



6. For the third frame, try something different. Click the Dot located in the right bottom margin. Then deposit dots on the screen by moving the DRAW icon around, clicking each time you want to place a Dot. Color your Dots a different color than your shapes, using the color boxes.



7. Now it's time to take a look at what you've created. To run your movie, click GO in the center bottom margin. How's that for action? When you start to feel dizzy, click again to stop the film. You can now go back and add more frames or start a new movie from scratch by selecting CLEAR MOVIE from the pull-down FILE MENU.

Now it's time to get fancy. Turn to the manual to find out all that FANTAVISION can do when you put it through its paces. If you'd like a preview of what's in store, boot up the flip side of the disk. A self-running “Movie Matinee” demonstrates what FANTAVISION can produce when teamed with a talented director...like you!



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